Trains

DECEMBER 1942

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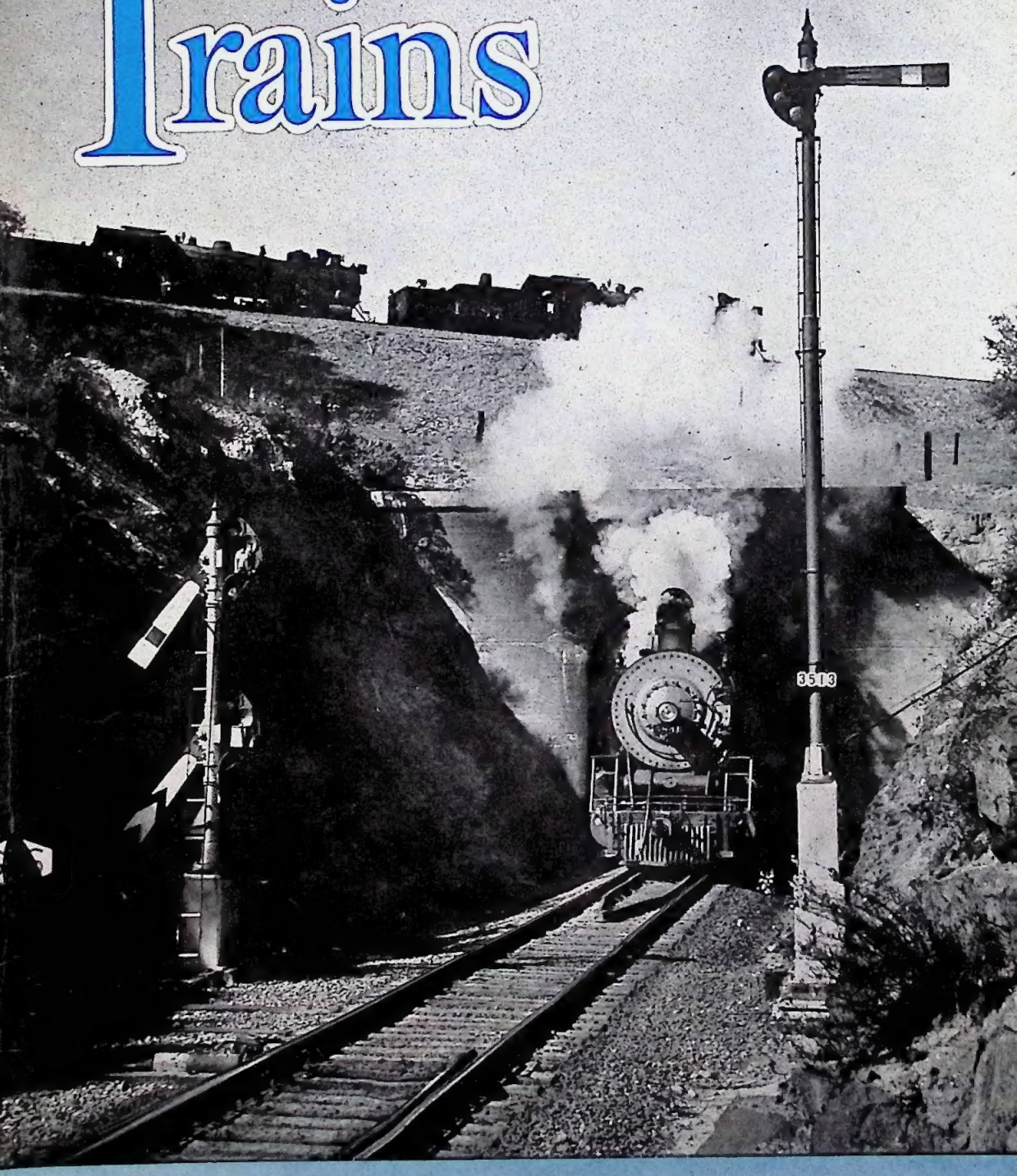
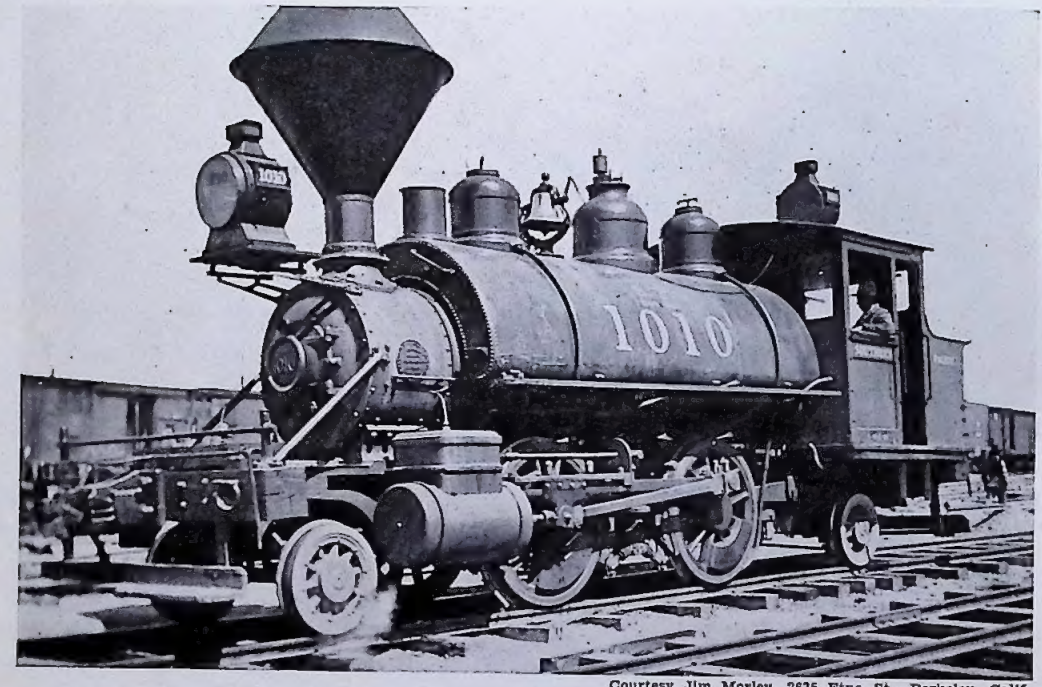


This month: The story of the Minneapolis & St. Louis.

Railroads, Locomotives and Travel



Courtesy Jim Morley, 2635 Etna St., Berkeley, Calif.

Old-time orphan on the Southern Pacific.

One of the interesting things a railroad photographer inevitably comes across is an old negative. This print was made by Willard Wood, from an old negative taken by R. W. Cooper in Sodaville, Nev., in 1904. That was about the time the great mines at Tonopah and Goldfield were becoming so important only to fade out soon after. Locomotive 1010 of the Southern Pacific was originally No. 80 and was built in 1884 by the Baldwin Locomotive Works. Sodaville is just south of Mina and up until recently two gauges of the Southern Pacific ran through that point. The track in the foreground in this picture is probably three-foot gauge, but locomotive 1010 is a standard-gauge saddle tank, a type now rarely seen. Some time after this picture was taken the engine was renumbered 568 and converted to a shop switcher. In 1929 it was scrapped. The engine had 48″ drivers, 15″ x 22″ cylinders, and there were no other engines just like it on the Southern Pacific.

On the covers.

The unusual railroad scene on this month's front cover can be found by patiently waiting at the famous Tehachapi Loop on the Southern Pacific's inland route from Los Angeles to San Francisco. This line was the first railroad between the two points and the famous loop was quite an engineering feat in its day. It is possible for a long train actually to cross over itself in running around this loop. This section of the railroad is used also by Santa Fe trains from the East to San Francisco, as that road has no tracks of its own along this section. The photo is by Joseph Muench, 839 Mission Canyon Rd., Santa Barbara, Calif.

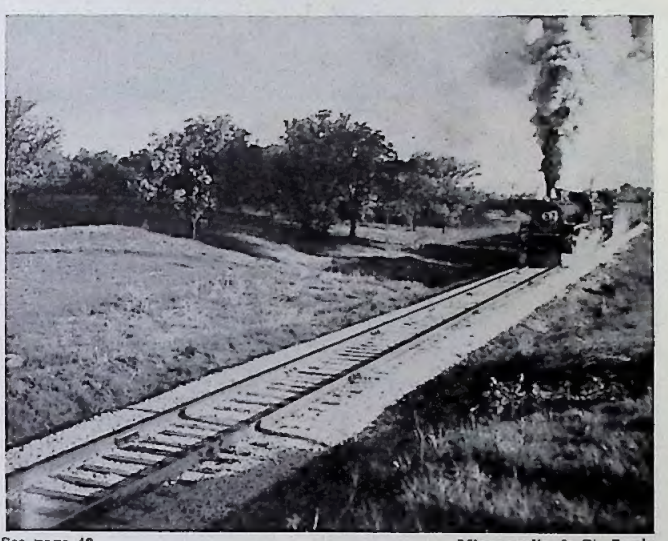
On the back cover is one of the famous articulated locomotives of the Southern Pacific crossing a trestle in the High Sierras. The similarity of the front of this locomotive to some electric designs, together with the boarded trackwork, is reminiscent of scenes on the New York Elevated.

Waybills

Some railroads make wide use of Diesel-electric power while other roads shun Diesels like the plague. This is popularly thought to be a result of prejudice, but the good sound engineering behind these apparently inexplicable preferences is suggested by only one fact selected from many: Chief advantage of the Diesel-electric is a thermal efficiency approximately four times that of the steam locomotive. But the prices of various fuels fluctuate widely. In some areas oil is cheap, coal expensive. In other areas one can buy three times as many B. T. U.'s per dollar in coal as in Diesel oil—and, with the higher first cost of a Diesel added in, where then is the much vaunted thermal efficiency? The battle of steam vs. Diesel will no doubt continue to be a case of each road solving its own problems according to its own operating conditions.

A doctor uses temperature as a quick indication of a patient's condition. O. D. T. uses layover of cars at important junction and terminal points where congestion is most likely to rear its ugly head. Layover is simply the ratio between the number of cars on hand at midnight and the number dispatched during the preceding 24 hours. This ratio may be different for various points, but at any one point it is a very sensitive indicator, and O. D. T. watches for any variation which might indicate a "fever." Then, like the doctor, it prescribes the proper remedy.

A. C. K.



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Trains

Editors: A. C. Kalmbach, Linn H. Westcott, Willard V. Anderson

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The first issue of TRAINS was for November, 1940. Many back copies available at 25 cents each. Vols. 1 and 2, bound in cloth, $4.00 each.

The Man in the Tower

BY EDWARD HUNGERFORD.

JUST below the Tower runs the single track of a railroad which once was the main stem of one of the newest and finest roads in all the land, which went through all manner of vicissitudes and now, thanks to the war, is humming with freight traffic once again. In other days this was the main line of the old New York, West Shore & Buffalo, built in the early eighties to parallel and to battle with the Vanderbilt-owned New York Central & Hudson River in its juiciest territory all the way across the state of New York, from Albany to Buffalo.

The Vanderbilts accepted the challenge vigorously if not cheerfully. They had bitterly resented the heavy interest of their traditional rival, the powerful Pennsylvania, in the West Shore enterprise, ignoring the fact that they themselves had been instrumental in the financing of the South Penn road from Harrisburg, where it had connections with the independent Reading system out of Jersey City, to Pittsburgh. If finished, this would have been a shorter and a better road than the main line of the Pennsylvania between those cities.

The West Shore was completed from New York for the 430 miles through to Buffalo. The 200 miles of South Penn never were finished. For many years its well graded right of way and tunnels stood unused. Recently, they were used for the wonderful new super-highway which extends most of the way across Pennsylvania.

The Vanderbilt-owned New York Central give the intruder in its territory a hard battle. Rates were slashed to nothingness—there was a time when you could go on excursion trains from Syracuse or Rochester or Buffalo to New York for a dollar or thereabouts. The West Shore could not stand that sort of thing very long. Its slender resources, already near exhaustion in the completion of a magnificent double-track railroad for more than four hundred miles, disappeared. The road was in receivership before its first trains ever reached Buffalo. The Central took it over—for a mere song—raised its own rates again and began to recoup its own stout treasury from the drains upon it.

The paralleling West Shore became an auxiliary or relief line to the four tracks of the Central all the way from Albany to Buffalo. South of Albany the two roads ran on opposite sides of the Hudson River and there was plenty of traffic for each. But the Central never forgave the West Shore for trespassing on its domains. It humiliated the road in every possible fashion. Finally, it robbed it of its through passenger service to the West from Weehawken (opposite the city of New York) and west from Boston over the erstwhile Fitchburg and through the Hoosac Tunnel to a connection with West Shore at Rotterdam Junction. It long since took the name "West Shore" from the engines and the cars. The road became the miserable Cinderella of the Vanderbilt system. Finally, they ripped up one of the two mainline tracks from near Albany through to Buffalo. The line down the west bank of the Hudson, which retained a local passenger service and a fairly brisk through-freight one, was suffered to maintain its business and keep its double track. Once-busy Rotterdam Junction became a mere shadow of its former busy self, a sort of ghost town of the railroad center it was.

Nowadays the West Shore teems with traffic once again. Perhaps the Central wishes that it had that second track back again. The bridges and the embankments are all ready for it, but the rail and the labor are quite impossible at this moment to find. So the road which runs just below the Tower is operated in a curious but highly practical fashion. During the first 12 hours of the 24 it runs exclusively as a westbound line; each day at noon it changes and for the next 12 hours it runs exclusively eastbound. It is a simple and efficient solution of a hard traffic problem. A solution that hardly would be possible save on a secondary or relief line, impossible on one that was compelled to handle regular passenger service.

IN recent years there has been a good deal of pulling-up of these second tracks of former double-track line . . . The New England Railroad, reaching from Boston through Willimantic and Hartford and through Danbury and over to the Poughkeepsie Bridge, was an important and ambitious railroad project. It never could acquire an entrance of its own into New York City; and because of that, it failed and was absorbed, just 40 years ago, by its rival, the New York, New Haven & Hartford, then more or less popularly known in Connecticut as the "Consolidated."

Today its chief traffic is as the coal arm of the New Haven reaching over the Poughkeepsie Bridge to a connection with the hard-coal roads at Campbell Hall and at Maybrook. For this, the western end of the property is retained as a double-track line; but somewhere east of Danbury it begins to be and remains, until within a few miles of Boston, a single-tracker. The days of its glory, when once it carried the famous Ghost Train of all-white coaches between Boston and New York, are all gone. Two lonely local passenger trains traverse most of the route; its freight traffic east of Danbury is modest, indeed.

There are many instances, east and west, of such reduction in rank and importance of former roads of almost trunk-line proportions—to say nothing of the hosts of single-track branches which have been abandoned and torn up. The present wartime demand for scrap metal, especially for rail, is speeding the process. The old-time formalities of hearings before various public commissions has been tossed aside; the War Department simply sizes up the situation and without a "by your leave" closes down a branch line and tears up the rail for its own emergency needs. Your little railroad is here today; tomorrow it is gone—probably forever.

AND yet the roads that remain are making the most magnificent

What has become of the 50-odd old engines that were on exhibit at the New York World's Fair? Mr. Hungerford will reveal the fate of some of them in the second of this series of articles, in January Trains, and will discuss the seizure by the federal alien property custodian of the Italian State Railways equipment.

showing of their entire history; in spite of a freight-car ownership that has dropped from approximately a million cars at the beginning of the twenties, to some 800,000 cars today, a 25 per cent loss, the American railroads are today handling 25 per cent more freight traffic than at the height of the peak in the twenties. Credit that, if you will, to better loading, to say nothing of longer haul. The O. D. T. in Washington, Office of Defense Transportation to you, by raising the minimum l. c. l. to six to eight to ten tons to the car, is responsible for the first; the motor truck, with its deathlike grip on short-haul traffic, is responsible for the second.

The Washington boys may or may not have been right in "freezing" passenger service so as to make it difficult to increase train service this Winter in the North when the weather grows bad and tires are a little worse than ever, but the fact remains that our railroads, which had their biggest passenger year of all time in 1920, and had some 41,500 passenger coaches in which to haul it, in 1942—with but 28,000 passenger coaches—are again very close to the 1920 record. Nor are the passenger coaches, like the box car, of larger carrying capacity than their prototypes of a dozen years ago. The standard coach of that day seated from 70 to 80 passengers; the standard passenger-coach of today seats from 50 to 60. In the meantime, the railroads learned that it is better salesmanship to carry 50 people in real comfort than 80 people in comparative discomfort. That idea is the genesis of the deluxe passenger coach that has become almost standard upon the American railroad today. Fewer seats and better.

But the fact that more passengers can be and are being carried in a fleet that has diminished one-third in unit number, even more in seating capacity, is a tribute to better use of equipment. More and more the tendency is not to let passenger equipment stand idle for hours in terminals. The Boston & Maine in Summertime brings its streamlined *Flying Yankee* from Maine up to Boston in the early morning, shoots it off for a midday run up into the White Mountains and back, and still manages to get it back to Boston to make the evening run to Portland and Bangor once again . . . The Burlington is not content to let a train make a one-day run each day for the 400 miles between Chicago and the Twin Cities and call it a day. The swift Diesel streamliners must double the long run each day. A good piece of mechanism needs lubrication more than it needs rest. The old idea of "resting" locomotives and cars for undue periods has been thrown into discard. The passenger-miles of the American railroads are climbing, to say nothing of the passenger revenues.

THE future of these revenues, not to mention other phases of the railroad in the after-the-war days, already is the subject of intensive study on the part of the roads, through their central body, the Association of American Railroads in Washington. Rates, both freight and passenger, will play a large part in this study. What will be done with these rates is anybody's guess. But it is pretty certain that the criminal mistake that was made at the end of World War I of pegging the passenger fares to nearly four cents a mile, in the face of swiftly increasing competition on the highway, will not again be repeated. When it was corrected, passengers began to flow to the railroad once again. But it was almost too late. If it had not been for World War II and its attendant rubber famine, the roads still would have been in a bit of a predicament, even with the effect of their new fast streamliner trains. They know this, and, knowing it, are seeking to find a real solution which will keep railroad passenger service profitable and useful after the end of the present war.

Edward Hungerford

Along the Hudson.

This is the West Shore line of the New York Central, crossing a creek north of Bear Mountain highway bridge. Indiscernible on the far shore is the main line of the NYC. The valley of the Hudson River contains more than 80 per cent of the population and wealth of New York State, and it was for the lucrative business of this area that the West Shore and the NYC fought the rate war which ended in the Central owning its opponent.

New York Central.

ERIE LIMITED

It rolls through a panorama of superb scenery.

A. V. Neusser, 40-21 61st St., Woodside, L. I., N. Y.

A. V. Neusser.

Westbound *Erie Limited.*

The *Limited* is seen here as it nears Gulf Summit, highest point on the route. The traveler has ample opportunity to view the eastern end of the route, as it is covered both ways in the daylight hours.

"ADAM loved Eve because Eve was the only one around that he could love. And by the same token the Deposit people have to love the Erie Railroad because there is no other railroad around to love, but they really do love it, and are proud of it." So spoke the Rev. Graydon Scott of Deposit, N. Y., on the occasion of the inaugural trip of the *Erie Limited* in June, 1929.

The sentiment expressed by Rev. Scott might well be termed a factor for the introduction of the *Erie Limited* by the officials of the Erie. Every railroad, small or large, has a drawing power that is felt by the people who live close to it or who use it continually. Friendliness, and even affection, grows throughout the years, and this attitude is recognized by those who operate the railroad. For such friendliness, railroad company officials often go to tremendous expense to create new features of comfort and convenience that their patrons may have the best in equipment and facilities. True, other factors enter the picture, but, because railroading is the greatest service industry in the world, every effort is made to perpetuate the friendliness created by service.

For years, manufacturers and business men in New York, New Jersey, Pennsylvania, Ohio, Indiana, and Illinois have depended on the fast freight service offered by the Erie. But when these men wanted to travel to New York or Chicago it was necessary to use other railroads. Although passenger trains were regularly scheduled on the Erie between New York and Chicago, the equipment was not up to date nor were the schedules nearly as fast as on competing railroads. The Erie was, and is, primarily a freight railroad.

In order to facilitate speedy, comfortable travel for those business men and manufacturers located in the territory through which Erie trackage was laid, the new *Erie Limited* was established on June 2, 1929.

To cover the distance between Jersey City (not counting the 25 minutes from New York City via ferry boat to Jersey City Station) and Chicago in 1929 took 23 hours 50 minutes. Today the *Erie Limited* takes 35 minutes longer to cover the same distance. This is a point in behalf of the policy responsible for the introduction of the *Limited*. While other railroads have cut their running time considerably between New York and Chicago, the Erie has not felt it desirable to attempt to meet through competition. Before the war caused all well known "name" trains to make more stops, the *Limited* was already doing just that, and has, in common with the Nickel Plate-Lackawanna, consistently held to a fare about $2 less than other deluxe train fares between New York and Chicago.

The most beautiful scenery is on the eastern end of the run and, fortunately, is covered both ways in daylight. Passengers must cross from New York to Jersey City by ferry or through the Hudson River tubes, which have a station under the Erie depot. Leaving the terminal, trains immediately dive into a long tunnel under Bergen Hill, passing right under the Lackawanna tracks at the far portal.

The Erie then works northward through Paterson to Suffern, just over the border in New York State. At Newburg Junction the low-grade freight line branches off to the north side of the regular main line. This is the railroad wonderland country leading to Middletown. Beyond Middletown the railroad goes over a small summit and drops into the beautiful series of valleys that extend in a straight line from Kingston, N. Y., to Stroudsburg, Pa.

Eastbound *Erie Limited.*

The Erie Railroad went to great expense to prepare the right of way for the *Limited* before its introduction in 1929. This impressive shot portrays a combination of power and speed at work on a good roadbed.

Robert A. LeMassena, 318 N. Maple Ave., East Orange, N. J.

The *Limited* at Croxton, N. J.

This shot was taken before the days of long locomotive runs, since the 2918, a Pacific with a small tank, is doing the work. The *Limited* is now being headed by Class K-5a locomotives, of which the Erie has 11. Operating between Marion, O., and Jersey City, N. J., these engines make 1460 miles per round trip. K-5a's, recently modernized, are equipped with large tenders.

After Port Jervis the railroad follows the Delaware River, and here can be seen remnants of the old Delaware & Hudson Canal, which was the father of the Delaware & Hudson Railroad.

At Lackawaxen, Pa., an important freight-hauling branch turns off to the left toward Scranton. Parts of this branch were at one time operated by cable. The first major summit is at Gulf, 1369 feet above sea level. A short distance beyond this the railroad crosses over the famous Starrucca Viaduct and follows the Susquehanna River all the way to Waverly. Then follows a series of southern New York towns, in almost make-believe scenic settings: Elmira, Corning (famous for glass), and Hornell. Here the Buffalo trains branch off and the main line becomes single track for a number of miles until Cuba Junction is reached in the heart of the lumbering country.

From Cuba Junction the *Limited* travels to Carrollton in the Bradford oil fields, then to Salamanca, Jamestown on beautiful Chautauqua Lake, Corry, Meadville, Sharon, and Youngstown, O. Shortly beyond Youngstown another line branches off to Cleveland, while the main line continues on through Akron and Marion, O., and Huntington, Ind., into Chicago.

The *Erie Limited* is usually headed by the K-5a type Pacific locomotive. [An article about these engines appeared in the first issue of TRAINS, November, 1940.] Normal consist of No. 1 (westbound) and position of cars in train are:

1 express, Akron to Chicago, sealed.
1 express, Jersey City to Chicago, sealed.
1 express, Jersey City to Chicago, work.
1 baggage-express, Jersey City to Chicago, work.
1 R. P. O., Jersey City to Chicago, work.
1 coach, Jersey City to Chicago.
1 buffet-coach, Jersey City to Chicago.
1 diner, Jersey City to Chicago.
1 sleeper, Jersey City to Chicago.
1 sleeper, Salamanca to Chicago.

Total, 8 cars Jersey City to Hornell, 7 cars Hornell to Salamanca, 8 cars Salamanca to Akron, 9 cars Akron to Chicago.

On weekends No. 1 is frequently a 10- to 11-car train east of Hornell and 8 to 10 cars

Frank Quin.

Erie train No. 1.

The *Limited* is train No. 1 westbound, train No. 2 eastbound, on the Erie timetables. It is seen here as it pulls out of Middletown, N. Y., on a cold morning in 1941. Engine is 2923, a 4-6-2, Class K-5a.

west thereof, mostly on account of increased coach needs.

Normal consist of No. 2 (eastbound) and position of cars in train are:

1 express, Chicago to Binghamton, work.
2 express, Chicago to Jersey City, work.
1 storage, Chicago to Jersey City, work.
1 R. P. O., Chicago to Jersey City, work.
1 coach, Chicago to Jersey City, work.
1 buffet-coach, Buffalo to Jersey City, work.
1 diner, Youngstown to Jersey City.
1 sleeper, Chicago to Jersey City.
1 diner, Chicago to Marion.

Total, 8 cars Chicago to Marion, 7 cars Marion to Youngstown, 8 cars Youngstown to Hornell, 9 cars Hornell to Binghamton, 8 cars Binghamton to Jersey City.

On Tuesdays the non-passenger-carrying cars are increased by one on account of the Chicago-Newark, N. J., *Life* magazine movement.

Weekends, because of increased coach needs, No. 2 usually carries 9 cars Chicago to Marion; 8, Marion to Youngstown; 9, Youngstown to Hornell; 11 to 12, Hornell to Binghamton; 10 to 11, Binghamton to Port Jervis; 11 to 12, Port Jervis to Jersey City.

During the fruit season, starting the latter part of April or first part of May, No. 2 frequently handles 12 cars, thus increasing the number of headend or non-passenger-carrying cars from 5 to 9, Chicago to Binghamton, and 4 to 8, Binghamton to Jersey City.

Double-heading is rarely resorted to except where there are 11 to 12 cars to handle and lost time to be recovered. There is no set program for double-heading either train, with the possible exception of No. 1 on the Allegheny Division, which requires relief from Hornell to Wellsville or Olean when there are 10 or more cars involved, even though the train is on time.

The divisions which the *Erie Limited* passes are as follows: Jersey City to Port Jervis, the New York Division; Port Jervis to Susquehanna, the Delaware Division; to Hornell the run is over the Susquehanna Division, then the Allegheny Division to Meadville; and in Ohio, over the Mahoney, Kent and Marion divisions, ending in Chicago on the Chicago & Western Indiana Railroad by trackage rights from Hammond.

*The Jarrett & Palmer Special**

FIRST WIRE BETWEEN BROOKLYN BRIDGE TOWERS FASTENED!
RUTHERFORD B. HAYES ELECTED 19TH UNITED STATES PRESIDENT!!
PARIS-LONDON COMPANIES PLAN LONG RAILROAD TUNNEL UNDER CHANNEL!!!
GENERAL CUSTER AND ENTIRE COMMAND OBLITERATED BY SIOUX IN WYOMING!!!!
THE GREAT TRAIN ARRIVED AT SAN FRANCISCO SUNDAY, JUNE 4, AT 9:43 A. M.!!!!

THESE are some of the U. S. newspaper headlines for the year 1876. However, *The Great Train* not only made the front pages of the papers of this country, but the story was printed in papers of nearly every country in the world. And with good reason.

The *Jarrett & Palmer Special* was the most famous train of the Nineteenth century. It was the first through transcontinental train, as far as is known, and it was the first train in the history of railroading to operate over such a distance on such a fast schedule.

Jarrett & Palmer, managers of the Booth Theater, New York, arranged for the train to carry Lawrence Barrett, the internationally known actor, and Frederick Thorne and C. B. Bishop to San Francisco. All three were scheduled to appear in Shakespeare's "Henry V," at McCullough's California Theater, San Francisco, on June 5.

The fastest regularly scheduled train between the two cities required seven full days to complete the trip. When Henry C. Jarrett proposed to the railroads that they arrange for a train to make the trip in just half that time to carry the illustrious Barrett and anyone else who wanted to go, the railroads jumped at the opportunity. Here, they speculated, was a chance to show the world what could be done on the already world-famous American railroad systems. The enthusiasm felt by officials of the lines that were to participate spread rapidly. The New York *Herald,* leading paper of the country, picked up the story, giving the enterprise full support. In an editorial, "From Ocean to Ocean," appearing in the May 26 issue of the *Herald,* it was stated, "Our friend Jules Verne, whose imagination of American railroads was so excitable that he made trains on the Union Pacific line leap over chasms and bridges, undertook to depict an extraordinary journey of his hero across the continent in his novel 'Around the World in Eighty Days.' But his imagination fell short of the reality which Messrs. Jarrett & Palmer propose to perform with their lightning train, which leaves New York for San Francisco on the first of June . . . which will be remarkable, not merely as a feat of daring and energy, but as an illustration of what resources in swift travel our railroads are yet to display."

Because the train was to start from New York, all arrangements for its journey were handled by the Pennsylvania Railroad. The train was first made up in Pittsburgh and ran as a special on May 31 to Jersey City to test the equipment, which consisted of locomotive No. 573, a baggage car, a combined commissary and smoking car, and a Pullman Palace Hotel car, *Marlborough.* The baggage car was painted red with gold lettering on both sides as were the other two cars behind it, "Jarrett & Palmer's Special Transcontinental Express."

Built into the baggage car was a wooden reserve water tank of about 1800 gallons capacity. A small donkey-engine was used to pump the water from the tank to the tender. Four thousand pounds of extra coal was also carried in the baggage car and was shoveled through the end door and into the tender en route. The next car, a 12-wheel coach, carried commissary supplies and also served as a smoking car.

The *Marlborough* was an elaborately ornamented Pullman having carved hardwood trimming throughout its interior. The forward part contained the kitchen, with an ice box, stores of meat and game, the dinner

* Information through courtesy of *Mutual Magazine,* Pennsylvania Railroad.

service, shifting tables, and the dormitory of the conductor and steward and his assistants. The main compartment was furnished in the lavish purple, red and gold style of the time, and accommodated 36 passengers, computed on the basis of two passengers to a berth.

The test run from Pittsburgh to Jersey City being non-stop, special arrangements were made for lubricating the locomotive. The eccentrics were oiled through a rubber tube and the drivers by means of copper pipes. No trouble was encountered and when No. 573 reached Jersey it was placed under guard as a protection against any possible tampering with the mechanism.

The round-trip fare, including a week's stay at the Grand Palace Hotel in San Francisco and privilege of return in six months, was $500. The tickets were in book form, five inches by four. The covers of the book were solid silver, burnished in the center. Making up the ticket and its various coupons were 10 leaves, all engraved from steel plates. Each ticket book was enclosed in a white satin-covered case which cost $40.

The transcontinental party consisted of about 40 members, among them Jarrett and Palmer, and the three actors, Barrett, Thore, and Bishop. Other famous figures of the time who made the trip were a Mr. Weede, of the New Orleans *Times*; Gen. Horace Porter, vice-president of the Pullman Car Company; a Mr. Roman, correspondent of the New York *Herald*, the London *Times* and the *Illustrated London News*; M. Morrier, correspondent of the Paris *Presse;* S. S. Moon, of the *Railway World*; Col. Alberg of the English Army; A. J. Cassatt, third vice-president of the Pennsylvania Railroad (later that road's great president who built the New York terminal); and Frank Thompson, general manager of the Pennsy. Some of the passengers rode *The Great Train* to Pittsburgh. Others only went as far as Chicago, and about

Arrival at Oakland Pier.

The Jarrett & Palmer special train arrived at Oakland Pier across from San Francisco on June 4, 1876, after running from New York in 84 hours 17 minutes.

Courtesy Southern Pacific.

Courtesy Southern Pacific.

half the original party stayed aboard until San Francisco was reached.

Not only did the newspapers of the country sponsor the idea, the New York postoffice endorsed the project and made arrangements for forwarding mail to the Pacific Coast and many other points on the route of the train. New York Postmaster James gave notice that mail for Pittsburgh, Chicago, Omaha, Sacramento and San Francisco would be forwarded on the *Jarrett & Palmer Special.* Typical of the mailpouch tags was the one carrying the mail for Pittsburgh:

PITTSBURGH
from
NEW YORK

Mail dispatched by Jarrett & Palmer's special fast transcontinental train through to San Francisco in 3 days, 12 hours, closing at the New York postoffice June 1, 1876, at 12.10 a. m.

If the Pullman *Marlborough* seemed lavishly adorned, so were some of the articles describing events concerning the affair: This is a bit of lavender and old lace from the pen of one *Herald* reporter, which appeared in a late extra on May 31, the night of departure of *The Great Train.*

> As the ferry boat left the Cortlandt Street slip after midnight with the adventurous travelers, their miscellaneous baggage, their sorrowful friends, their band of music, their stock of fireworks and numerous appendages, there was quite an ovation. Roman candles and other pyrotechnic inventions lighted up the boat on its way across the Hudson.

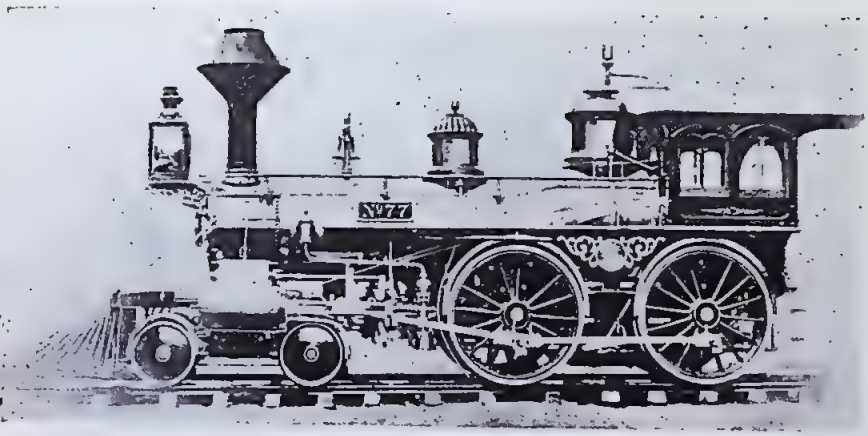
Wherever the train appeared along the route it was met by huge crowds which, having word of its being on the way an hour beforehand, lighted bonfires, played brass bands and fired cannons. When the *Special* passed the centennial grounds at West Philadelphia at 2:40 a. m., all the buildings were lighted in honor of the speeding train. Between New York and Pittsburgh public schools in the vicinity of the Pennsylvania trackage were closed, and factories emptied of workers that they might pay tribute to those aboard the train. The arrival at Harrisburg was cause for an ovation in which more than 3000 people participated.

At Altoona, D. M. Boyd Jr., general passenger agent of the Pennsylvania Railroad, also a member of the party, sent this telegram to the New York office of the railroad:

> Special Transcontinental Express,
> Pennsylvania Railroad.
>
> Altoona, June 1
>
> We have made an even run of 327 miles without stopping, and have at no time, while slowing up through towns and for crossings, run slower than 25 miles an hour. The rate of speed has only been thus reduced at three or four points. The speed during the rest of the run has averaged 48 to 50 miles an hour. The train has been on time at all stations, frequently from one to two minutes ahead. The perfect condition of the track and uniformity of the speed that has been maintained gives a feeling to the passengers of a moderate schedule.
>
> D. M. BOYD JR.

The arrival at Pittsburgh was the occasion for wild celebration. The Pittsburgh *Post,* issue of June 1, published an article, part of which was:

> This morning at 10:39, two minutes ahead of schedule time, the Transcontinental Express from New York to San Francisco in 84 hours, arrived at the Union Depot over the Pennsylvania Railroad, a large crowd of persons being present to witness its arrival. . . . The car inspectors, after concluding the inspection of the rolling stock at the Union Depot, were interviewed by our reporter, and they stated there was not a journal or pin on the engine in a hot condition. "She was perfectly cool," said one of the engineers.



Courtesy Union Pacific.

20 engines used.

Twenty locomotives were used in the Jarrett & Palmer transcontinental run. Two engine runs were outstanding, that of Pennsylvania Railroad No. 573, which pulled the train nonstop from Jersey City to Pittsburgh, and Central Pacific No. 149 (shown at far left with its crews), which pulled the train from Ogden to Oakland, 879.2 miles. No. 77, left, was one of 8 on the Union Pacific.

The train made no stop between Jersey and Pittsburgh, covering the 438½ miles in 10 hours and 5 minutes. Locomotive 573 was cut off and one belonging to the Pittsburgh, Ft. Wayne & Chicago Railway (now Pennsylvania main line), over which line the train traveled to Chicago, pulled the train out of Pittsburgh. Twenty-five stops were made before Chicago was reached, and four different engines were used. In spite of the stops and engine changes, the 468.3 miles of the second leg were covered in 11 hours 6 minutes. The Chicago & North Western Railway took the train over between Chicago and the transfer grounds at Omaha. From Omaha to Ogden the journey was over the line of the Union Pacific, and from Ogden to San Francisco the Central Pacific did the honors. The farther the train progressed westward the more excitement it created. On June 3 the New York *Herald* carried this story:

THE GREAT RUN

While the citizens of New York are quietly pursuing their daily avocations, retiring to rest at their regular hours and rising betimes in the morning; while the *Herald* is gathering up the news from all quarters of the globe and setting the enormous machinery to work to lay it before the people with the rising sun, *The Great Train*, which is to show us how near we are in point of time to the Pacific Coast, is speeding on night and day, never pausing and never tiring, on its way across the continent to San Francisco. Our advices today are from Cheyenne, and we learn from them that the lightning train is ahead of time; that it is flying through the valley of the Platte at the rate of 50 and sometimes even 60 miles an hour: and that the voyagers confidently count on taking their Sunday dinner in the California city. Half way across the continent—1650 miles—in 39 hours is no child's play, even for the iron horse. But we must not forget that the best part of the journey is passed, that the worst has yet to come. Nevertheless, we wish the train Godspeed and its living freight such a Sunday dinner as San Francisco so well knows how to furnish.

On June 4 this editorial appeared in the *Herald*:

THE FAST TRAIN

Still the Transcontinental Express thunders on, making a uniformly rapid progress, which will be judged by the fact that first "slowing up" experienced by the voyagers on the journey from New York was in Weber Canyon, where a party of Chinese were repairing the washed-out track. The train was at Winnemucca at 20 minutes past 8 p.m., and expected to land the passengers in San Francisco in time for breakfast. The most trying portion of the journey

before the train was the ascent and descent of the Sierra Nevada, a task requiring caution going down as well as patience going up, the grades being over 100 feet to the mile. . . . The scene at Cheyenne, with Mr. Jarrett firing Roman candles and one of the party, whose name is modestly concealed, telling the excited throng what time was made on the run from Gotham, is worthy of the artist's brush, and must take its place in history when some one qualified for the task undertakes to describe the material progress of the United States for the next centennial.

A dispatch from the *Herald* correspondent in San Francisco, dated June 4, stated, in part:

The Jarrett & Palmer transcontinental train arrived here at 9:39 a. m., local time. . . . The trip across the continent was made in 80 hours 20 minutes, calendar time. The trip, since leaving Elko Station . . . was wonderful for swiftness over mountain range and through deep valleys. As each station was passed the excitement grew apace and the party was received with that enthusiasm and hospitality peculiar to the Pacific Coast.

The success of the trip has caused great satisfaction this side of the Sierras and, though the people are accustomed to great efforts, our journey across the continent elicits wonder and astonishment here in California. Everybody seems surprised that the party is not fatigued to a degree of exhaustion, and the ovation we received was only to be expected on this side of the Sierra Nevada. Indeed, the closing scenes of our journey were more exciting than any that had preceded, for we were treated more like heroes from a battlefield than as men who had peaceably sat in a railroad car to be whirled across the continent on half time. None of the passengers, sensible as they were that the achievement was wonderful, ever dreamed that the people of a whole city would turn out en masse on a bright Sabbath morning to welcome 18 or 20 gentlemen who would rather slip out of sight than face a multitude of excited citizens. But so it is. Ever since we set foot on

the pavements of San Francisco we have been surrounded by throngs of people who, if anyone opened his lips to a personal friend, clustered about him eagerly catching the few disjointed sentences dropped by a speaker who had crossed the American continent from the Atlantic to the Pacific in less than three days and a half.

It is quite evident that the correspondent had trouble figuring the running time. Other newspaper comments throughout the country were varied and vague concerning the actual running time. No one seemed able to calculate it with any degree of accuracy from the reports given them. However, G. Davidson, United States service chief, Pacific Coast Area, cleared the issue up with fair accuracy in a statement from his headquarters.

Between Jersey City and Oakland Point: Lightning train left Jersey City Pier June 1, 1 h. 3 m.; arrived Oakland Point June 4, 9 h. 22 m.; apparent running time 80 h. 19 m. and difference of longitude 3 h. 13 m. 7s.; actual time occupied in running between Jersey City and Oakland Point 83 h. 32 m. 7 s. . . . From Jersey City to Market Street Ferry slip, San Francisco . . . apparent time 80 h. 40 m. 18 s.; actual time 83 h. 53 m. 45 s.

Davidson based his calculations on the time of departure from Jersey City as being 1:03 a. m. Actually the train left at 12:53 a. m. The discrepancies in figuring elapsed time are easily understood, for this was a number of years before the adoption of standard time. The schedule of the entire run as it appeared in the *Official Railway Guide* was:

Schedule of Jarrett & Palmer Transcontinental Special
New York to San Francisco
June 1 to 4, 1876

Thursday, June 1
Pennsylvania Railroad

Miles				Actual Time
0.	Left	New York	Philadelphia Time	12.40 a.m.
1.0	"	Jersey City	"	12.53 a.m.
56.8	"	Trenton	"	2.00 a.m.
88.2	"	Mantua	"	2.39 a.m.
154.4	"	Lancaster	"	4.26 a.m.
191.2	"	Harrisburg	"	5.18 a.m.
322.8	"	Altoona	"	8.12 a.m.
439.5	Arr.	Pittsburg	"	10.58 a.m.

438.5 miles in 10 hours 5 minutes. Average speed, 43.50 miles an hour. Entire run made without a stop.

Pittsburgh, Ft. Wayne & Chicago Railway

Miles				Actual Time
	Left	Pittsburgh	Philadelphia Time	11.05 a.m.
0.	"	Pittsburgh	Columbus Time	10.34 a.m.
1.0	"	Allegheny	"	10.50 a.m.
34.7	"	Homewood	"	11.49 a.m.
101.4	"	Canton	"	1.30 p.m.
188.8	Arr.	Crestline	"	3.55 p.m.
188.8	Left	Crestline	"	4.00 p.m.
260.6	"	Lima	"	5.39 p.m.
320.0	"	Fort Wayn	"	7.05 p.m.
424.4	"	Valparaiso	"	9.20 p.m.
468.3	Arr.	Chicago	"	10.19 p.m.

468.3 miles in 11 hours 6 minutes. Average speed 42.1 miles an hour. Stopped 25 times. Changed engines 4 times.

Chicago & North Western Railway

Miles				Actual Time
	Left	Chicago	Columbus Time	10.50 p.m.
0.	"	Chicago	Chicago Time	10.30 p.m.
74.8	"	Rochelle	"	11.59 p.m.

Friday, June 2

138.1	Left	Clinton	Chicago Time	1.15 a.m.
177.8	Arr.	Loudon	"	2.03 a.m.
177.8	Left	Loudon	"	2.20 a.m.
219.4	"	Cedar Rapids	"	3.26 a.m.
340.4	"	Boone	"	6.31 a.m.
441.4	"	Dunlap	"	8.57 a.m.
488.5	Arr.	Council Bluffs	"	9.58 a.m.
491.0	"	Transfer Grds.	"	10.00 a.m.

491.0 miles in 11 hours 30 minutes. Average speed, Chicago to Council Bluffs, 42.60 miles an hour. Fastest speed made, 62.2 miles an hour. Stopped nine times. Changed engines four times.

Union Pacific Railroad

Miles				Actual Time
	Left	Omaha	Chicago Time	10.43 a.m.
0.	"	Omaha	Omaha Time	10.10 a.m.
91.7	"	Columbus	"	12.22 p.m.
153.8	"	Grand Island	"	1.48 p.m.
291.0	"	North Platte	"	5.18 p.m.
414.2	"	Sidney	"	8.06 p.m.
516.4	"	Cheyenne	"	10.41 p.m.

Saturday, June 3

572.8	Arr.	Laramie	"	12.33 a.m.
710.0	Left	Rawlings	Laramie Time	3.09 a.m.
846.6	"	Green River	"	6.20 a.m.
957.0	"	Evanston	"	9.10 a.m.
1032.8	Arr.	Ogden	"	10.57 a.m.

Average speed, 41 miles an hour; maximum, 72 miles an hour. Stopped 22 times. Changed engines seven times. 10 hours 21 minutes ahead of schedule time.

Central Pacific Railroad

Miles				Actual Time
0.	Left	Ogden	Laramie Time	11.01 a.m.
0.	"	Ogden	San Francisco Time	9.44 a.m.
91.7	"	Kelton	" "	11.46 a.m.
182.8	"	Toano	" "	2.07 p.m.
218.4	"	Wells	" "	3.00 p.m.
275.2	"	Elko	" "	4.22 p.m.
358.9	"	Battle Mountain	" "	6.48 p.m.
419.2	"	Winnemucca	" "	8.20 p.m.

Sunday, June 4

Miles				Actual Time
588.8	Left	Reno	San Francisco Time	12.25 a.m.
623.7	"	Truckee	" "	1.56 a.m.
689.1	"	Colfax	" "	4 30 a.m.
743.2	"	Sacramento	" "	6.09 a.m.
791.2	"	Stockton	" "	7.13 a.m.
852.7	"	Niles	" "	8.52 a.m.
879.2	Arr.	Oakland Wharf	" "	9.29 a.m.
882.9	"	San Francisco	" "	9.43 a.m.
882.9	"	San Francisco	New York Time	12.57 p.m.

(The parties on the train were to arrive in San Francisco in time to dine there on June 4.)

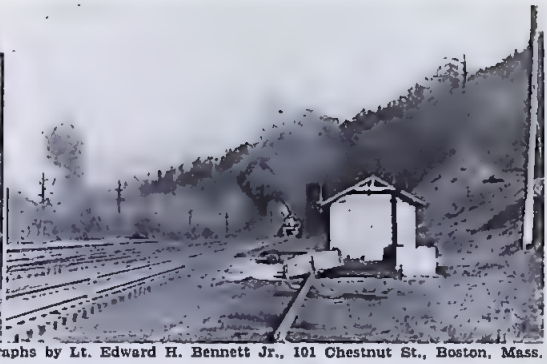
879 miles in 23 hours 45 minutes. Average speed, 37 miles an hour. 16 stops. The entire run made with one engine. The brake shoes on the cars were badly worn on arrival at Ogden, and not having any of the same pattern to replace them the train was run by "hand brakes" (only) from Ogden to Truckee, and the speed was materially lessened on the heavy descending grade, as the men were fearful of losing control of the train.

Grand total of distance, 3313.5 miles. Actual time of transit, 84 hours 17 minutes. Average speed for entire distance, 40 miles an hour. Stopped 72 times. Engines used, 20.

From New York to San Francisco today, on regularly scheduled trains of the Pennsylvania and Union Pacific railroads, is 61 hours 10 minutes. At New York the *Golden Arrow*, No. 79, which is a daily train, leaves at 11:40 p.m. and arrives in Chicago at 4:40 p.m. Elapsed time, 18 hours. After an hour and 20 minutes layover in Chicago the Union Pacific streamliner *City of San Francisco*, leaves at 6 p.m., arriving at San Francisco at 9:50 a.m. on the second day. Elapsed time, 43 hours 10 minutes. The *City of San Francisco* leaves Chicago on the second day of the month and every third day thereafter. It is quite probable that if a special transcontinental train were to attempt a record run from New York for San Francisco today, as did the *Jarrett & Palmer Special* in 1876, the elapsed time would be under 50 hours.

A 13-GUN salute was fired as Lawrence Barrett stepped from the first of the carriages bringing the party to the Palace Hotel on the morning of June 4. The hotel manager acted as host to the entire party at a breakfast which was an elaborate affair. Mayor Bryon and leading citizens were present and many speeches were made. On June 5 Mr. Barrett appeared at McCullough's California Theater. He played to a very, very large audience.

All woodcuts from a contemporary copy of the London Illustrated News; courtesy Union Pacific.



Photographs by Lt. Edward H. Bennett Jr., 101 Chestnut St., Boston, Mass.

Carolina Incident

★ The *Carolina Special* Saluda, N.C., on the

On the Southern Railway's line between Columbia, S. C., and Asheville, N. C., is one of the steepest grades in the country for a class 1 railroad, 300 feet of 4.7 per cent and 3000 feet of 4.4 per cent in the three miles from Melrose to Saluda where the railroad climbs 603 feet. The *Carolina Special* is the fast train over this route, carrying through Chicago-Charleston sleepers and running between Charleston, Columbia, Asheville, Nashville, and Cincinnati, with connections for Louisville and St. Louis.

In the first picture at upper left the *Carolina Special* approaches Melrose and a Santa Fe type helper (white plume) gets ready to couple on behind. Succeeding pictures, left to right, show the *Special* coming up to Melrose, where the grade levels out and all trains stop for water. The road locomotive is a Pacific, attractively painted in Southern style. The lower sequence of photos shows the *Special* chuffing up the grade toward Saluda, helper behind.

The last photo very graphically shows the

climbs a grade near
Southern.

difference between the grade and the level track in the foreground. To the left is a safety switchback. The switch to this siding is always left set for the siding so that any runaways will be deflected into the upgrade safety track, and is set for the main line only on proper whistle signal.

Tennessee Narrow Gauge

★ A prosperous 35-mile railroad that is hard to surpass for scenic beauty along the right of way.

WINDING through the deep gorges of the Doe River in the Eastern point of Tennessee where it extends between North Carolina and Virginia, is a very unusual railroad with a rather long name, the East Tennessee & Western North Carolina. This is a remote section in the Blue Ridge Mountains and ordinarily a railroad only 35 miles long in this part of the country would be thought of as little more than a lumber line on its last legs, but such is not the case here. This railroad last year earned more than $1,500 net income for each of its 35 miles, a figure hard to beat on a railroad of any size.

The ET&WNC, which has been three-foot gauge ever since it was opened in 1882, doesn't even run regular passenger service, but in the summer time, on every other Sunday, an excursion train known locally as "Tweetsie" is operated so the tourists may see some of the finest beauty spots in the Southland.

The excursions start at Johnson City, Tenn., on the Southern-Norfolk & Western main line between Chattanooga and Washington. Here, at at altitude of 1,700 feet above sea level and surrounded by very beautiful scenery beneath Buffalo and Cherokee Heights, are many small manufacturing industries, a State Teachers' College and ample accommodations for a large host of tourists. Among the industries at Johnson City are iron furnaces and rolling mills, machine shops, tanneries, brick making plants, cigar factories, box factories, table and furniture factories and several other wood-working establishments. The city was settled in 1870 and the present population is about 26,000, double the figure of as late as 1920.

Here, years ago, Daniel Boone, Andrew Jackson and Andrew Johnson each made U. S. history. Here, the coal-handling Carolina, Clinchfield & Ohio RR. crosses the main line of the Southern and here the East Tennessee & Western North Carolina makes its terminus, transferring its shipments to the standard gauge.

Let us take a trip in the cab of one of the East Tennessee & Western North Carolina locomotives with engineer Walter R. Allison as our guide. Allison has been with the railroad for over 35 years and knows every inch of the track. Our engine is No. 10, a low-wheeled Ten-Wheeler built by Baldwin. The locomotive has 16″ x 22″ cylinders and carries 180 pounds of steam pressure, while the drivers are 44″ in diameter—a very small size. The main driving wheel has no flange in order to negotiate the sharp curves which are as much as 32 degrees, about 180 foot radius. It has a huge boiler for narrow gauge, but that's very much needed because of the small drivers and long cylinder strokes which on the 4 per cent grades require a lot of steam.

The locomotive is kept in excellent shape, all the machinery is polished, the paint is fresh and there's a white stripe along the running board and underneath the cab. Behind us is a combination car—mail, baggage, LCL freight and unused passenger accommo-

All-year gift.

What can be a better Christmas gift than a magazine subscription, coming all year in monthly installments long after the one-time gifts are forgotten! And for almost anyone a year's subscription to TRAINS is especially welcome. Here is a magazine that's different and yet on a subject of almost universal interest—railroads and travel. Fill those gaps in your Christmas list right now, by ordering subscriptions to TRAINS. Use the handy order envelope enclosed with this issue—but use it soon to insure handling before December 25.

James P. Shuman, courtesy William Moedinger Jr.

Their boilers must make plenty of steam for the long upward runs.

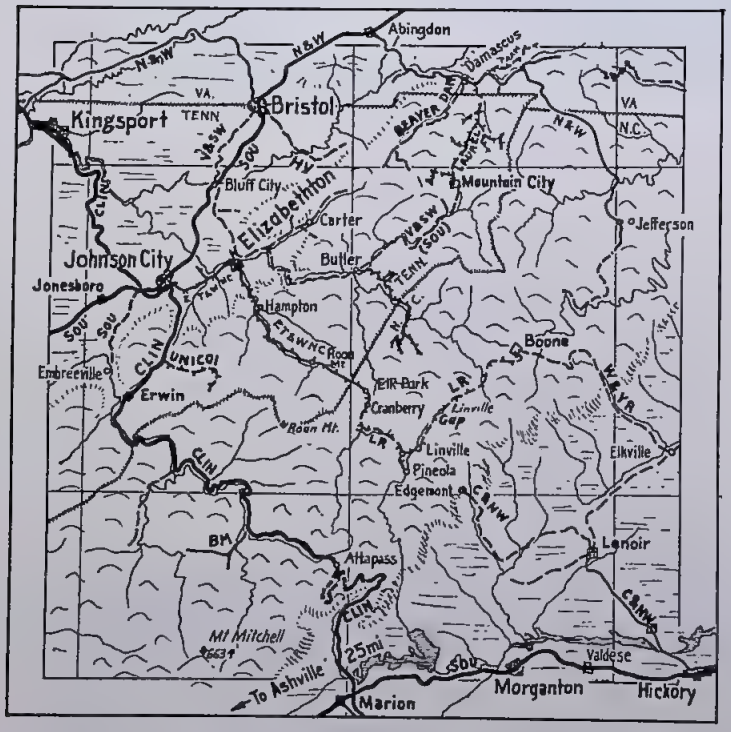
With boilers so large, these locomotives on the ET&WNC look almost like standard-gauge engines. The 0-8-0, built by Alco in 1906, is an unusual switcher wheel arrangement for a narrow-gauge railroad. Notice also the angle at which the valve chests are set. No. 10 (Baldwin, 1910), below, is the engine you ride in the story on the opposite page. These views were taken at Johnson City.

Theo. A. Gay, 624 78th St., Brooklyn, N. Y.

dations. Regular passenger service was discontinued when the line beyond the present railhead at Cranberry, N. C., to Boone, N. C., was abandoned in March, 1941. This part of the line beyond Cranberry was technically known as the Linville River Railroad.

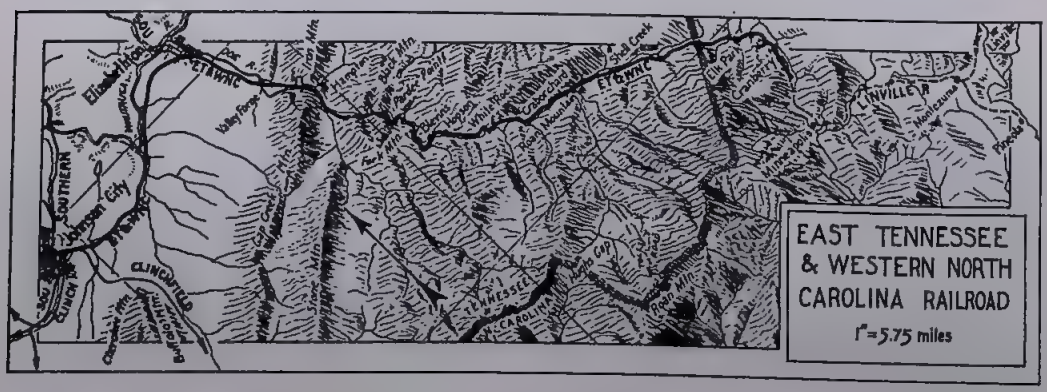
The ET&WNC handles heavy shipments out of Cranberry, and probably will for some time to come. Why? Well—Cranberry is one of the best producing mines for magnetic, low-phosphorous-content iron ore which is used in the production of tool steel. Out of Cranberry last year came over $300,000 worth of operating revenue and every bit of it went over the East Tennessee & Western North Carolina. After paying out $188,000 worth of operating expenses and $66,000 worth of taxes, the railroad still had a net income larger on a per-mile basis than most other railroads. It is owned by the mining operator, the Cranberry Corporation.

Our train is ready to pull out now. Behind the combination car are various freight cars for the points along the line and some empties for the mine. As we leave the Johnson City yards, engineer Allison points out a third rail located outside our running rails all the way to Elizabethton. This allows the rail-



Backwoods lines.

The country portrayed to the left is that section of the Blue Ridge located in northern Carolina and Tennessee. The East Tennessee & Western North Carolina, whose route is shown enlarged below, enters the very heart of these beautiful mountains. Other railroads indicated by their initials are: Southern; Linville River; Clinchfield; Black Mountain; Carolina & North Western, once a narrow gauge; Laurel, Virginia & Southwestern; Holston Valley; Beaver Dam; Unicoi; and Wilkesboro & Yadkin River. Our data on the last named line, however, is questionable. Narrow-gauge lines are shown with alternating ties, abandoned lines dashed. In the map below, all of the ET& WNC is narrow gauge.



Linn H. Westcott.

road to handle standard gauge freight cars on this first section of the railroad where there are no bad grades or curves.

The first five miles seem almost effortless as we approach the Watauga River, which is seen to the left. Watauga means "beautiful" in the Cherokee Indian language, and certainly beautiful it is. Its banks are covered with cedar, hemlock and laurel. Beyond is the broad, fertile Watauga valley. It was in this valley that our forefathers established the first free, independent government west of the Alleghenies. On the right stands a marker which shows the site of the old Watauga Fort. In this valley today is found the purest strain of Anglo-Saxon blood in America.

As the train swings around a broad curve to the right, the town of Elizabethton comes into view. This is a rapidly growing city at the junction of the Doe and Watauga Rivers. From Johnson City we have dropped about 200 feet, but from here on the railroad will climb steadily, until at Cranberry the line is 3,100 feet above sea level. Till last year, the Southern Railroad had a competing branch into Elizabethton, but now the East Tennessee is the only railroad serving this point. To show how the city has grown, in 1920 its population was 2700 while today it is nearly five times as large. This growth is due to the richness of the nearby countryside where minerals, timber, fertile soil and water power combine to make a promising future. These resources are now being harnessed by large plants for producing artificial silk. Under a giant sycamore tree, still standing on the Doe River, Andrew Jackson held the first court in what is now Tennessee. There is nearby an iron furnace that was used in Revolutionary days, the iron being brought down from Iron Mountain beneath which our train will pass as soon as the local switching has been accomplished.

Across the river is Sycamore Sholes. It was there that our ancestors assembled before marching up the Doe River, crossing the Roan Mountain to defeat the defiant British General Ferguson, at Kings Mountain. This battle, known as the turning point of the Revolution in the South, gained for us a great portion of the freedom that we have since enjoyed.

The train now swings almost due south and for the next five miles the whole panorama changes. Lofty mountains rise in front of us almost like a wall. Directly in front of the train is a gap in the mountains which allows both the railroad and the Doe River to pass through. The mountain to the left is

How Big?

The following list of railroads includes the 12 largest systems in the United States and Canada. See if you can guess their relative sizes. Beside the system that has the greatest number of miles of first track (route miles) place the figure 1, second in size, figure 2, etc., until the smallest of the group is given a 12.

You need not worry too much if you get a few wrong, for if they are almost right they will still help your score. Be sure to fill in every answer, then see page 24 for the scoring.

Canadian Pacific ___( )	Santa Fe _____( )
Pennsylvania _____( )	Rock Island _____( )
Burlington _____( )	Southern Pacific, including NWP, etc. _____( )
Union Pacific _____( )	
New York Central ( )	
Great Northern ___( )	North Western ____( )
Canadian National _( )	Milwaukee Road __( )

Is our face redder!

After taking special precautions to key question No. 5 in the "All Aboard" train-route quiz last month by mentioning Sedalia, MP shop city, as being along the route. We gave as answer the Wabash Railroad. All of you know now, of course, that the correct answer is Missouri Pacific.

called Iron Mountain because of the iron ores found nearby years ago. As the walls of the mountain rise on each side, the scenery becomes increasingly beautiful and almost without warning we are rolling through a deep gorge. Here the railroad crosses over the river on a deck type covered bridge and immediately enters a tunnel. The river swings a quarter of a mile to the north and back to join us again at the other end of the tunnel.

Excursion in the Doe Gorge.

Locomotive 10, all dolled up for Sunday, has paused with its trainful of tourists in the beautiful gorge along the Doe River. These "old-time" narrow-gauge coaches are used only for these bi-monthly outings each Summer season.

Just as we are catching our breath, the mountains pass and we turn into a small valley with the village of Hampton across the river. The train stops for water and to drop off some l. c. l. and express shipments, and while we are waiting Allison proudly points out how well the roadbed is kept on this line. It's just as trim as the main line of the Pennsylvania.

After a little twisting, the train enters another gorge in the second range of mountains. The river is much narrower and twists considerably, crossing under the railroad many times while the latter dives into spurs of the mountain through tunnels. It is interesting to listen to the puffing of the locomotive, first echoed from the walls of the canyon, then muffled by a tunnel, then outshouted by the rumble as we pass over a bridge.

Frank Clodfelter, Asheville, N. C.

The next eight miles can be seen only by railroad, for there is no road entering the gorge until farther up the river. Their natural beauty is indescribable, impossible to portray even by the cunning devices of the photographer. We now pass Pardee Point, where Summer excursion trains stop to let the passengers view the mighty cliffs of granite. The railroad has been climbing 3 per cent but at this point it levels off. Thomas E. Matson, who was the civil engineer surveying the road, provided a level at this point so that trains could get around the curve more easily and the firemen, before the days of automatic lubricators, could give the cylinders some oil.

Ahead of us is the hardest pull in the gorge and the sparks start flying out of the stack of the locomotive as it lunges into the grinding climb. Engineer Allison points out a large fish hawk poised high in the air with its pinions set and talons spread. A minute or so later we see it dive down and snatch a fish from the river and fly up to a cliff to feed its young. We cross two steel bridges and pass through more tunnels and in another 10 minutes the station at Roan Mountain comes into view.

This point is named for the peak to the south, 6313 feet above sea level. A scenic toll highway leads 12 miles to the top of the mountain and people from every state in the Union visit this garden spot each year. On top is a great paradise of purple rhododendrons, 800 acres of them, and in the midst of this is a clear, cold bubbling spring whose waters are only a few degrees above freezing. This is the second highest mountain in the Appalachian range, only a few feet lower than Mount Mitchell. On a clear day it is possible to see seven different states from the top of the Roan.

The railroad continues on a 3 per cent grade and as we approach the headwaters of Doe River, the Tennessee-North Carolina state line is crossed. After Elk Park, the

railroad swings south to Cranberry where the mines and railroad yards are located.

We spoke of the Linville River Railroad previously. Until floods made necessary its abandonment this line continued south to Montezuma and Linville, then climbed over Linville Gap, 4081 feet elevation, and down into a spur of the Watauga River, finally winding up at Boone, N. C., on the east side of the mountain range.

Crossing a unique bridge.

Most covered bridges are arranged so that the track runs through their darkened interiors, but due to the proximity to the first tunnel on the ET&WNC the tracks are run along the top of this bridge. The covering is of course to protect the structure from weathering. Locomotive 12 heads the train.

James P. Shuman, courtesy Wm. Moedinger Jr.

Quiz Scoring. See page 21.

Write your guesses down in column C, and place the difference between your guess and the correct answer in column D. Add all the figures in column D and you have your score. 0 is perfect, 36 is very bad, but you've got to be good to get less than 15. 20 is average.

Example: If you guessed that PRR is third, place a 3 in the C column after PRR. Since the correct answer (column B) is 7, the difference is 4 and you place a 4 in the D column after PRR. If all 12 figures in the D column were 4, the score would be 48, but you won't do that badly—we hope.

(Data as of 1940)

A	B	C	D
CPR	2	--	--
PRR	7	--	--
CB&Q	9	--	--
UP	8	--	--
NYC	5	--	--
GN	11	--	--
CNR	1	--	--
ATSF	4	--	--
RI	12	--	--
SP	3	--	--
CNW	10	--	--
MILW	6	--	--

Score is total of column D.

John L. Buckland, Melbourne, Australia.

Australian train tackles 5¼ per cent grade.

With two tank engines at the front and another at the rear a special train of the New South Wales Government Railway attacks a 1 in 19 grade on the Camden branch and goes over the top. The 2-6-4 type locomotives are class Z-20. New South Wales is a state in the southeast corner of Australia, about twice the size of California. All Australia is approximately the size of the United States. The some 6000 miles of standard gauge New South Wales railroad are mainly tributary to the principal seaports, Sydney and Newcastle.

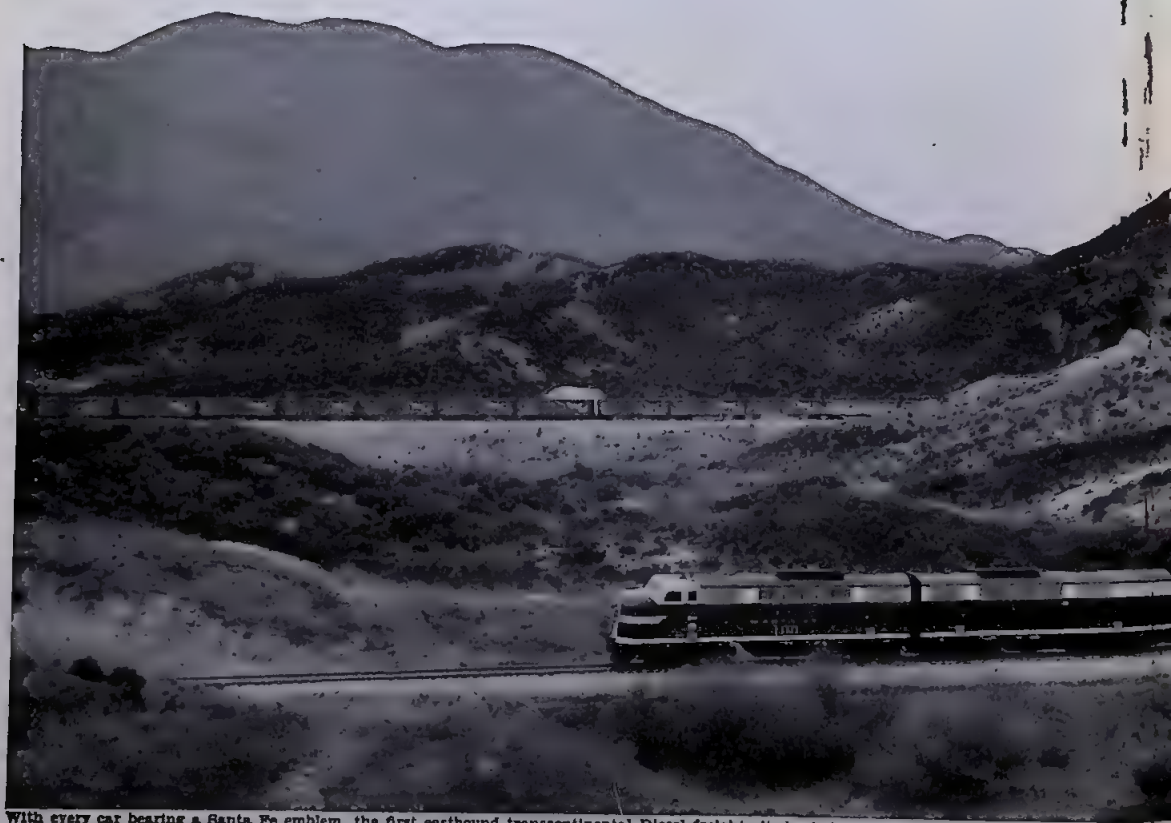
Fresh Fruit Every Day

★ **Unheard of, unexpected, prosperity came to California's fruit growers when the railroads perfected the refrigerator car.**

By C. W. Workman.

THERE is a column in our morning paper with a subheading "Do You Remember Way Back When;" then follows a description of something that was commonplace years ago but which has been nearly forgotten in this rapid progression of today's civilization. For instance, do you remember way back when we blew out the lights instead of pushing a button? Let's go back a few years ourselves, and see what seemed impossible then that is commonplace today. Did we think then we would see the day when the continent would be spanned in a few short hours by giant air liners flying through the stratosphere, or Diesel-powered, air-streamed passenger trains roaring along mile after mile at an average speed of more than 60 miles an hour? I don't think we did; yet we have those things today and they are so commonplace we take them for granted.

In the same manner most people take the fresh citrus fruit they have for breakfast nearly every morning for granted also, with never a thought about what has been done



With every car bearing a Santa Fe emblem, the first eastbound transcontinental Diesel freight climbs Cajon Pass, 1941.

so they may enjoy their daily glass of orange juice or half grapefruit which only a few short years ago was considered a luxury beyond their reach. But there is a very interesting story here, which starts back nearly 150 years ago, when citrus fruit was first introduced in California.

Although citrus trees had undoubtedly been planted before, the first known planting in California was made by Padre Thomas Sanchez at San Gabriel Mission, near Los Angeles, in 1804, and the first commercial planting was a two-acre orchard laid out in 1841.

These early plants consisted of several varieties of oranges, and it was not until 1873 that the popular navel oranges were introduced near Riverside, Calif. This variety proved to be superior to any produced up to that time, but the production period was limited to the Winter and Spring months. In 1876 plantings were made of the Valencia orange and this variety filled one of the needs of the grower, inasmuch as the production period occurred during the Summer and Fall months. With these two varieties the grower was able to have fresh fruit available for shipment every day of the year.

Next Month:

"72,000 a day." That's the ticket sale total at Washington Union Station, now busiest in the country, excluding commuter traffic. E. L. Thompson tells the exciting story of heavy wartime traffic in the railroad station at the nation's capital next month in TRAINS.

Another feature recounts in authentic colorful detail how the Union Pacific Irishmen set a world's record by laying 10 miles of track in a single day way back in 1869.

Clarence R. Weaver tells a vivid story of the Susquehanna & New York, now abandoned.

All photos courtesy Santa Fe.

Citrus production in the state increased rapidly, especially after the advent of the railroads into the citrus producing area of Southern California. The Southern Pacific completed its line south from San Francisco in 1876 and the Santa Fe opened its direct line from the East in 1885. With this means of transportation new markets were opened to the California citrus grower which was greatly inducive to increased production. The first shipment made by rail in a refrigerator car was about the year 1885.

The increase in production continued at a rapid pace and by 1920 it was believed to be as large as the markets could consume. During that year approximately 45,000 cars of oranges, lemons and grapefruit were shipped from California alone.

Many problems, including overproduction, confronted the industry, and these problems had to be solved if successful operations were to continue. Research laboratories were put to work to find an outlet for the surplus by-products. National advertising campaigns to make the consumer more citrus-fruit-conscious were launched. Both these ventures were successful and the surplus was noticeably reduced.

Transportation problems also began to command more attention at this time. One of the difficulties being experienced was the deterioration of fruit in transit, which was detrimental to both the shipper and the carrier. The shipper desired to deliver his products at destination in better condition to a more satisfied consumer, and the railroads wanted to reduce claim payments for deterioration in transit. With the cooperation of the railroads and the shipper, the United States Department of Agriculture at this time inaugurated extensive research to determine what was actually happening to a carload of fresh fruit while in transit and what steps would be necessary to correct any fault or defect found in the shipping methods then employed.

This research work was not confined to fruit in transit but included the preparation of the fruit for shipment as well as the protection at destination. The research work undertaken covered all phases of the handling then given the fruit, and every effort was made to eliminate the many difficulties being experienced. This work started in 1921 and has continued up to the present time. Growers, shippers and the railroads have been furnished data secured from tests made, and through corrective methods the shipping of citrus fruit has been reduced to a practical science. Delivery is made to the consumer in nearly the same condition as when first picked from the trees.

As a result of the improved condition of the fruit at destination and with continued national advertising reminding the consumer of the many beneficial properties contained in an orange, lemon, or grapefruit, the consumer demand has increased steadily until today shipments from California and Arizona amount to more than 100,000 cars per year, or an increase of more than 100 per cent over the total shipments made in 1920. This increased production in California and Arizona has been made also in the face of a greatly expanded citrus industry in the Southern states of Texas and Florida, which enjoy the advantage of location nearer the Eastern centers of population than California and Arizona and where total shipments amount to nearly as much as the California-Arizona trade.

The improvement of facilities has been a watchword with the railroads, and the desire to deliver to the consumer, in all parts of the United States and Canada, fresh fruits and vegetables—in fact, all perishable products—in as nearly the same condition as when first loaded has been the goal of the railroads since the first refrigerator car was constructed.

The first patent for a refrigerator car was granted in 1867, and the first freight shipment made under refrigeration was in 1868, when a carload of strawberries was shipped from Cobden, Ill. But the condition at destination was far from satisfactory. The ice tanks, containing a mixture of ice and salt, froze the berries nearest them but did not prevent the berries in other parts of the car from decaying. It was very evident that improvements would have to be made if the transportation of fresh fruits and vegetables by rail was to be successful. No thought was given to the circulation of air necessary to any kind of successful refrigeration.

In 1896 the Santa Fe began operating its first refrigerator equipment, which had many improvements over the first refrigerator car. Bulkheads were placed in each end of the car, which provided an ice bunker yet were

so constructed as to permit circulation from the ice chamber out over the load in the car. Insulation consisted of hair and was approximately one inch in thickness. As yet complete air circulation was not provided, as no consideration was given to installation of floor racks which would raise the load several inches off the floor and permit the circulation of air beneath it. This was probably due to a lack of complete knewledge of air circulation at the time. Floor racks were installed for the first time about 1910 and made a permanent part of the refrigerator car equipment. This new feature eliminated much of the deterioration of fruit in transit by permitting complete circulation over and beneath the load.

No other radical changes in refrigerator car construction were made for the next decade, but considerable research work was done by the carriers and car builders which resulted in a greatly improved car being built about the crucial period of the citrus industry during 1920. Some of the improvements contained in this new car were sectional bulkheads that could easily be raised or lowered, permitting heavier loading under ventilation; improved ventilating devices and hatch covers, and two inches of the latest type of insulation.

The Santa Fe purchased several thousand of these cars during the next few years and felt its refrigerator car requirements would be filled for some time to come. However, this was not the case, due to increased movement of perishable traffic. Soon additional equipment was purchased with other improvements, including solid bulkheads with screened openings at the top and bottom which made a forced circulation of air where it was most needed, a flat-top hatch cover with insulated plug attached, and an improvement in the ice bunker permitting the circulation of air around as well as through the ice in the bunkers, thus increasing the effective cooling surfaces.

It was not until the middle 1930's that the next radical changes in refrigerator car construction were made, starting with the introduction of the steel-sheathed car. Today the conventional refrigerator car operated by the Santa Fe contains such improvements as a waterproof floor, perforated floor racks that permit more efficient circulation, riveted steel roof, and hatch covers equipped with a patented sponge rummer that is practically airtight. These cars have three inches of insulation in the side walls and 3½ inches in the roof and floor.

The latest equipment added to these cars is circulating fans located in each end of the car and operated with a pulley device connected with one of the outside car wheels. These fans augment the natural circulation of air within the car and equalize the temperature between the top and bottom of the load. The fans permit much heavier loading, making a saving to the shipper in the cost of refrigeration per unit, and reducing the number of cars needed for a season's shipment. The fans are the result of years of experimental work conducted by the Preco Company of Los Angeles with the cooperation of the Santa Fe. Cars so equipped are at present furnished the shippers on order without additional cost.

The products transported in this latest type of car will reach the consumer in a condition that has long been the goal of the railroads transporting perishable freight.

Car Supply.

In order to effect a uniform distribution as desired by the shipper, carriers maintain dependable freight schedules over various routes to all parts of the United States and Canada, and freight trains are now operated much the same as passenger trains, to reach a designated point at a specified time.

An accurate knowledge of market conditions must be had by the shippers, and this information is furnished through their sales organizations located in various parts of the United States and Canada. If indications are that certain markets are glutted after cars have been shipped to that particular market, they may be reconsigned without any additional cost. All that is necessary for the shipper to do is to furnish the railroad with the new destination he desires on any of his cars that have been shipped and the change is accomplished at the nearest point possible, the car continuing on to the new destination without interruption of its regular movement.

The location of the car is known at all times through a reporting system maintained by the carrier. A symbol is given a car when it is shipped, and the car number and this symbol are reported from time to time

All for your health and happiness.

Chipped ice is blown over some shipments to maintain a low degree of cold. Motors attached to outside of shafts in yards keep the ventilator fans going even when the car is not in motion. At right above is illustrated the increase in loading made possible by the use of fans while the diagram at the bottom of this page shows the air circuit. The fan is located at the point marked F, and is so designed that it will not blow too hard as the train increases its speed.

to a central office where record is maintained of the movement. This diversion service is maintained by the carriers at considerable expense, but it is an important feature that enables the shippers to accomplish their desired uniform distribution.

Because of the tremendous volume of perishable traffic to be moved, the car requirements are heavy. These requirements must be estimated and anticipated in advance of shippers' orders so shipments can be made when wanted. Oftentimes it is necessary to rush empty cars from the East in order to have an adequate supply available.

The cars are assembled near the production areas. Before being furnished for loading they are given a complete mechanical inspection and any defects are repaired immediately. The cars are then thoroughly cleaned and placed in a sanitary condition ready for loading.

Icing Facilities.

Ordinary ice is and has been the principal preservative used in the transportation of fresh fruits and vegetables, and, as the preparation of citrus fruit for shipment is of vital importance, exceptionally large outlays of icing and precooling facilities are maintained by both the shippers and the carriers.

Some of the larger shippers of citrus fruit maintain their own precooling rooms in their packing sheds, where the fruit is placed after packing to remove the field heat before being loaded for shipment. The Santa Fe at San Bernardino and the Southern Pacific nearby at Colton maintain their own large precooling plants, in addition to extensive icing facilities, for the cooling of the fruit after loading has been completed. This is accomplished by the blowing of refrigerated air through the car for several hours, after which the car is iced to capacity.

when necessitated by weather conditions. Nothing is left undone insofar as providing these protective features to insure the furnishing of the proper class of service necessary to retain as nearly as possible the condition of the fruit at the time it was loaded.

Specialized Personnel.

Some carriers, and especially the Santa Fe, maintain separate departments of experts who have been especially trained in the handling of perishable freight. These experts in their line are required to have a full knowledge of all the different classes of protective service essential to the transportation of perishables. They are also familiar with the train schedules and the location of icing and heater stations, as well as other technical knowledge relating to transportation problems.

These men are located in the producing areas, at icing and heater stations and other principal stations en route. They are on duty at all times supervising and assisting in the furnishing of the protective service that is necessary. An inspection is made of each car of perishable freight by these experts at their respective stations to see that the proper class of service requested by the shipper is being furnished and to see that the car is moving in good order. The field men are in constant contact with district supervisors who, in turn, are in contact with a central office advising that office of the movement of perishable freight through their districts and assisting the shipper in any way possible. The vigilance of these men is not relaxed until a car has reached destination and delivery has been accomplished.

Due to the efficiency of these men it is a rare occasion that a car of perishable freight is improperly handled even though thousands of cars are in their care within a year's time.

The development of the citrus industry and the evolution of the refrigerator car has occurred over practically the same period, and the same problems have been of mutual interest to each. The western railroads like to feel they have been of some assistance in the development of this great industry that is now so vital to our country.

It is past history now, but perhaps you can remember when the only time you had an orange, the precious fruit was in the heel of your Christmas stocking.

Extensive icing facilities are maintained on the Santa Fe between California and Chicago at strategic points, only a few hours apart as now determined by expedited freight schedules, for the protection of perishable freight in transit. These icing facilities are maintained at all times regardless of the fact that thousands of cars are moved under ventilation without the necessity of icing due to the fact that weather conditions are such that icing is unnecessary. In addition to icing facilities, heater service stations are also maintained where portable heaters are installed in cars for protection against cold

Minneapolis & St. Louis

By Frank P. Donovan Jr.

vention. Plotts points out the amount of tin used in soldering the connections in one of these tanks would make 5000 tin cans

the two ... action by the state.

these regions and has pointed the need for more and more ac-

M. & ST. L. SOLD

Success of Rehabilitation Program Marks End of 19-Year-Old Receivership

BY JAMES M SUTHERLAND
Staff Writer, Minneapolis Star Journal.

Minneapolis, Sept. 11.—Because a white-haired human dynamo by the name of Lucian C. Sprague has not got the word "quit" in his vocabulary. Minneapolis and the Northwest have a railroad serving them today that 10 years ago had been given up for dead. Crowning proof of that fact was the order Thursday, by Federal Judge Gunnar H. Nordbye, approving the reorganization of the Minneapolis & St. Louis railroad into a solid, well financed property with every assurance of future success.

A decade, even seven years ago, the M. & St. L. was dying. Nearly everyone, including its employees, had practically given it up as a railroad past all hope of saving.

But Sprague and his lieutenants marshaled their forces and brought

Lucian Sprague

the plan, during weeks of hearing, before an interstate commerce commission examiner. Most of their regular business hours were spent at those hearings, while they directed operations of their railroad during hours most business men rest and sleep.

Now the longest receivership in railroad history—19 years—has been terminated. All that remains is the legal red tape inevitably accompanying such a task.

That the program bore fruit is attested by the road's operating statements. In the first seven months of this year, for example, the road had a receiver's net income of $1,157,537—and it wasn't so long ago when that was a red figure every month.

Sprague will tell you that this success isn't his. He will say it was the swell job done by W. W. Colpits, the New York consulting engineer who labored for years over the reorganization program, and T. W. Wright, counsel for the reorganization committee, and J. W. Devins, general manager, and H. W. Ward, general traffic manager, and G. A. Anderson, comptroller.

They all did their part, but it was Sprague, the 57-year-old former cowboy, fireman, engineer, superintendent, etc., who was the sparkplug for them all.

Any one of them—and every employee on the road—will tell you that.

deputy is now holding

for the office of senator in the capitol has taken

Not long ago I was standing before a large map in an office of the M&StL, studying this sprawling transportation system. The main lines extend in crank-handle fashion from Peoria west to Oskaloosa, thence north to Minneapolis and finally west again to Watertown, S. D. The Minneapolis-Peoria division is the backbone of the entire railroad and a real money-maker. On the other hand, the Watertown run may be regarded as a secondary main of considerable local importance, although not very remunerative. Other important lines are the two routes to Des Moines running from Winthrop and Albert Lea, Minn., respectively, on company rails and by trackage rights to unite at Tara, Ia. (just west of Fort Dodge), and thence continue to the state capital. In addition, Des Moines is reached by a branch from Oskaloosa, too, there is a heavy interchange route to Albia. The remaining lines include the 114-mile Watertown-Leola run, through a sparsely settled region of South Dakota, and four secondary branches shooting off the main stem in central Iowa.

"Looks like it's sprawled all over the Midwest," I remarked to the company's traffic solicitor.

"It does at that," laughed the traffic man, "but let me tell you something: We're an agricultural road; yes, and at the same time we're a bridge line of no mean importance."

"Like the RF&P," I tendered, remembering my college days in the South.

"Well, yes and no," came the reply. "The Richmond, Fredericksburg & Potomac has heavy passenger traffic as well as carded freights in conjunction with other roads. We have time freights, plenty of 'em, but coach riders—the few that use our line—don't go very far. Still, the chief difference is that Richmond-Washington tonnage *has* to go RF &P; it has no alternative routing, whereas Minneapolis-Peoria freight has a choice of several routes over different railroads. In other words, you don't have to ship M&StL,

but you'll want to," he said smilingly, "and I'll tell you why."

With this he walked over to the company's calendar (an attractive bit of advertising showing Minnehaha Falls, a semi-streamlined freight locomotive and a map of the system) and pointed out the principal routings via the "portals" of Minneapolis-St. Paul and Peoria.

"Less likelihood of delay," he commented. "We avoid most of the congested districts and consequently have a high on-time performance."

Then came an explanation of the various interchange points: Nemo (a hamlet between Peoria and the Mississippi River), where Santa Fe freight by the trainload is wheeled to and from Peoria over the M&StL; Albia, junction with the Wabash giving "time" service to St. Louis and Kansas City from the Peoria Gateway Line; Albert Lea, where hotshots off the Illinois Central are quickly dispatched to the Twin Cities; and Fort Dodge, another IC connection assuring swift Omaha-Minneapolis through service.

"Between East and West . . . Peoria Gateway Best"—that's the railroad's slogan. And it's more than an idle boast, else the company's steadily increasing "bridge" tonnage could hardly be explained. Of course, off-line traffic representatives are largely responsible for augmented inter-line freight, but only a high quality of service will insure continued patronage. Today the road's long time-freights of 60, 70 and sometimes up to 90 cars contain much of this "bridge" traffic from points all over America and from many localities in Canada.

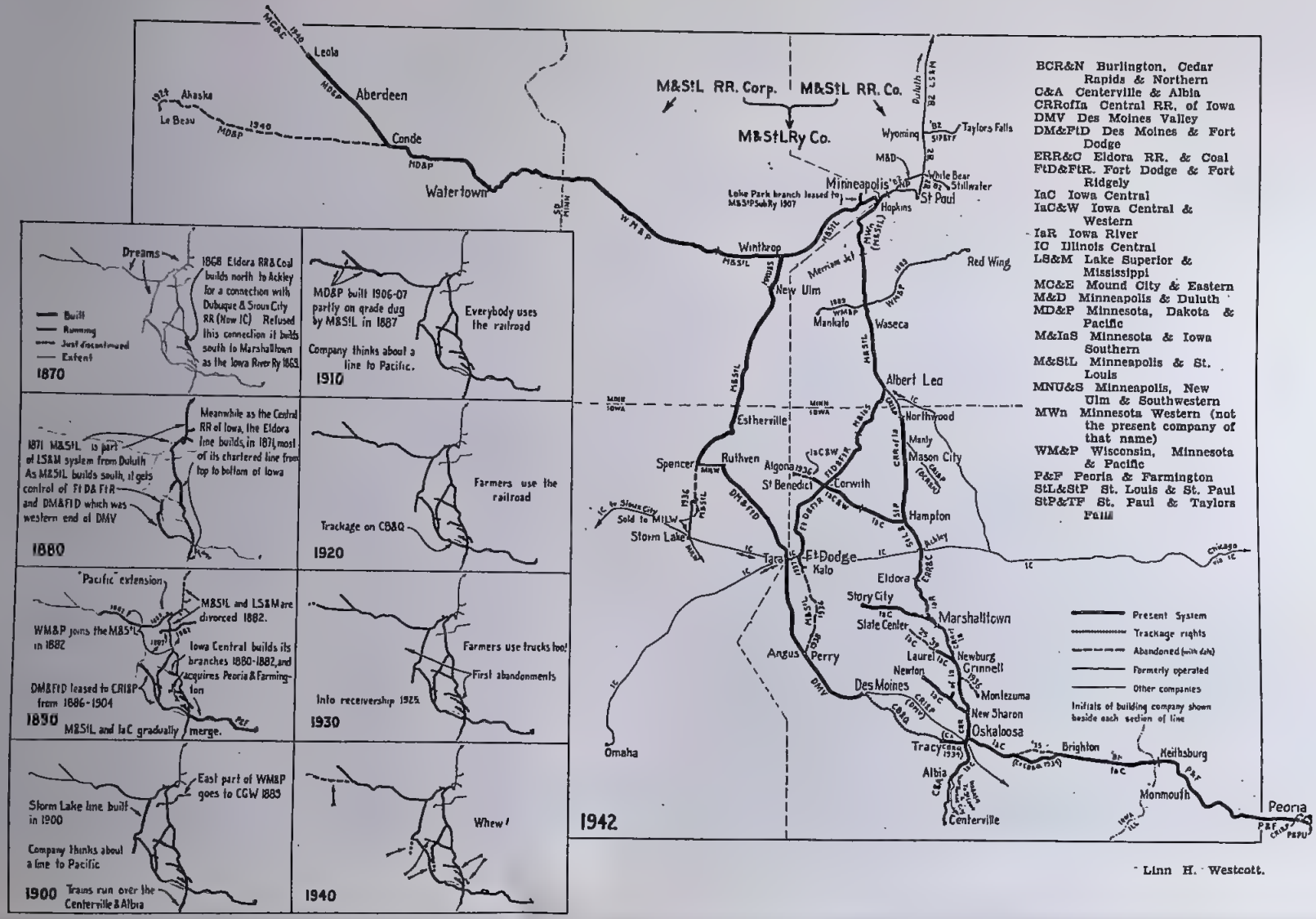
But the folks along the M&StL seldom think of the company as an intermediate carrier. No, it's their railroad hauling their products to their markets. We have intimated that the property was built more or less as a grange road, and even to this day, notwithstanding the heavy bridge traffic, it is largely dependent on agrarian shipments. Why? Let's look for a moment at its originating freight to find the answer.

Wheat, corn, barley, oats, rye, potatoes; cattle and fresh meat—all products of the farm—account for over 50 per cent of its on-line traffic. Other originating freight consists of mineral products, particularly soft coal from Illinois and Iowa, adding about 22 per cent, and the remainder is made up of manufactured goods, lumber and l. c. l. shipments.

Streamstyled Mikado.

The M&StL has used a little sheet metal and some paint to fix its Mikes up into classy-looking jobs, moving testimonials to a progressive management.

Minneapolis & St. Louis.



Linn H. Westcott.

Of late there has been a decided increase in new industries located along the system due to the live-wire industrial department, making the carrier less subject to fluctuations in revenue arising from crop failures—this, plus the fact that, when both originating and bridge tonnage are lumped together, agricultural and animal products account for only about 36 per cent of the total traffic. Thus a road once almost wholly dependent on husbandry is now assured of a stabilized all-weather, all-season revenue with farm products still its No. 1 meal ticket.

Being an agricultural road, the Minneapolis & St. Louis serves mostly rural towns of exceedingly limited population. Apart from Minneapolis, Des Moines, Peoria, Oskaloosa and Fort Dodge, the communities served are not just small, they are tiny. Common, matter-of-fact towns, these, yet peopled by hard-working, industrious folk, a credit to their railroad and their nation. It was Lincoln, I think, who once said, "God must have loved the common people, for he made so many of them." If such can be said of the ordinary Midwestern hamlet, God must have had a warm spot too for the Minneapolis & St. Louis, for these people came in abundance all over the 1409 miles of its single-track right of way. And yet it is from the solid, frugal folk in these communities that some of our most competent executives are recruited. Look back a few years, for example, at the time when the agent at Redwood, Minn., was a young chap named Richard W. Sears. A good man, that Sears, capable and willing with an eye to the future and both feet on the ground. Practical? Well, let the following incident speak for itself.

An unclaimed shipment of watches . . . a perplexed station agent. But not for long, for Sears, after locking up that night, hit upon an idea to sell the timepieces to villagers and neighboring farmers. Then, as now, the M&StL passenger trains were reliable but not particularly fast; hence, a trip to the city by these farm folk was an infrequent occurrence. Besides, they would reason, here was the depot master selling the latest metropolitan watches as something less than metropolitan prices, so why go to the Twin Cities for them? And how the timepieces sold! Just an "ad" through the mail sent to names and addresses taken from the telephone book turned the trick. "Good business," thought Agent Sears, "guess I'll buy other articles and see what's in the selling-by-mail game." This he did, and in a remarkably short time built up the world's largest mail-order business: Sears Roebuck & Company.

"The Peoria Gateway" is the M&StL's slogan, and indeed the gateway, where M&StL joins such important Eastern roads as Pennsylvania and Big Four, means much to the road's traffic.

The terrain traversed by the M&StL, while not spectacular, has a pleasing vastness and rolling grandeur typical of the Midwest. One sees the flat soybean prairies of Illinois, the undulating farm lands of Iowa still and earthy as a Grant Wood painting, the lakes and rippling streams in Minnesota, and wheat, great fields of it as far as the eye can see, in South Dakota. The very names of stations—Cedar Lake, Eden Prairie, Junction Switch, Ayrshire, Mallard and Plover; others, as Pioneer, Deep Haven, Dallas Center, Young America, Marsh, Steamboat Rock, Oak Grove and Morning Sun—have fresh, invigorating connotations, names that blend nicely with Middle Western farm and town atmosphere. Indeed, one could easily picture Phil Stong's homely drama of a country station in his Iowa novel *Village Tale* as having its locale on the Minneapolis & St. Louis.

Tradition has it that James J. Hill once remarked (aptly, if a bit rudely), "A passenger train is like a male teat, neither useful nor ornamental," a statement which may have more than a little truth. But even the limited passenger service on the Peoria Gateway Line serves a definite purpose, restricted

in operation, marginal in revenue as it is. That is why, save for the Des Moines-Oskaloosa run (most of it is by trackage rights over the Burlington, anyway), there is coach service on all major lines and mixed trains on the branches. A typical "varnish" is the *Day Express* rumbling out of Minneapolis at 9:10 every morning except Sunday for its 107-mile run to Albert Lea. Powered by a gas-electric mail-express-baggage unit pulling a baggage car and day coach, it rattles into the junction town at 12:30 p.m. After getting some grub and tossing off a few hands of cards the crew departs at 3:10 for the northern trip to "town," arriving at 6:35 in ample time for supper.

For passengers wishing to highball through to Oskaloosa or Albia and thence by close connections to St. Louis or Kansas City via the Wabash, there is the *North Star Limited,* also gas-electric, as are all the road's Pullman-green passenger trains, leaving Albert Lea at 4:25 p.m. (The four-hour layover between trains will give you ample time to look over the yards and equipment at the junction) for the southbound run to Albia, arriving at 11:15 p.m. On the northern trip you must wake up with the chickens and prepare to depart promptly at 4:20 for seven hours of daylight riding to Albert Lea. No, the company does not furnish diners nor sleepers on any of its lines, but if you desire a hearty meal the conductor will see that a good old-fashioned country lunch is delivered to the train at Hampton (65 miles south of Albert Lea) on both the *North Star* runs.

To serve communities between Des Moines and Albert Lea and provide additional service from the latter town to the Twin Cities. there's the *Night Express* (Nos. 3 and 4) departing from Minneapolis at 9:15 p.m. for the long 298-mile jaunt to Iowa's capital, arriving at 7:55 next morning. Returning, the little three-car accommodation clicks out of the yards at 8 o'clock nightly for the northbound run, putting its passengers in Minneapolis in time for an early-morning breakfast.

Then there's the *Dakota Limited,* another night "express" shuttling between Minneapolis' Union Station and Watertown on the company's western division. In addition, the road provides round-trip daytime motor-train service on the Oskaloosa-Peoria high iron (except Sunday) and on the Winthrop-Fort Dodge line (except Monday) on an owl run. Incidentally, passenger trains are run chiefly at night to haul mail and express which has accumulated in cities at the end of the day. Also, the odd daily *except Monday* schedule of Nos. 17 and 18 between Fort Dodge and Winthrop is explained by the printing of Sunday newspapers on Saturday evening for country circulation, and the heavy accumulation of week-end mail and express. Since there are few letters posted on the Sabbath, still fewer parcels checked, and of course no Sunday supplements for the following day, an early Monday morning train would have little to carry except passengers, which on this division are scarce at best.

The branch lines, as we have seen, have mixed service, usually tri-weekly, and on the Leola-Aberdeen segment Saturday only, "schedule irregular." Further, as the quarter-moon and triangular symbol on the timetable indicates, there are local freights on some of the main lines carrying "adult male passengers only," for mature riders who won't climb all over the caboose and annoy the crew. Complicated? Very much so, especially as the schedules are listed in the *Official Guide* section by section and symbol by symbol. For example, M&StL trains do not run into St. Paul, although they make close connections (*via Great Northern; ▪via Chicago & North Western) to that city. But to serve a whistle stop here and a flag stop there the passenger service is better than most roads going through thinly populated areas. The trains, too, for station-to-station locals, rattle along at a good clip once they get moving.

So we see that the M&StL is deep-rooted in the Middle West, a railroad whose continuous operation was taken for granted. True, the company was never very prosperous, and since 1923 has been in receivership. The farmers and merchants were not greatly concerned about their railroad until they read of dismemberment plans: wholesale abandonments and large-scale partitioning. Heretofore there had been headlines, and big headlines, too, in local papers about the financial aspects of the old "Misery and Short Life" but now the news made nationwide periodicals. What if the plan did go through? the individual wondered. How would it affect my farm, my business, my freight routing?

A. Howard Christiansen, 2039 N. 39th St., Milwaukee, Wis.

Typical M&StL locomotive.

Mikado No. 631, Class M-50, is typical of M&StL locomotives, neat and clean, with distinctive striping. Photo taken at Minneapolis engine terminal.

The answer was: adversely. From Leoda, S. D., to Excelsior, Minn., and from Peoria, Ill., to Minneapolis, sentiment was rapidly crystalizing against dismemberment and the much-publicized Associated Railways Company was the *bete noire* of virtually every M&StL town.

Associated Railways Company!

Hatched in New York, incorporated in Delaware and located in Chicago, this company, to the minds of rural folk, had too much of an absentee Wall Street complexion. But far more serious was Associated's plan to scrap one-third of the M&StL and parcel the remainder among eight larger railroads. This new "railway" was formed on the premise that the Peoria Gateway Line as it existed could never operate at a profit, that a large portion of its mileage should immediately be abandoned, and that the rest of the system could be more economically operated by eight neighboring Class 1 carriers. In other words, the roads would form a kind of pool whereby Associated Railways would purchase the M&StL at a foreclosure sale and take title. The carriers participating in this surgery were to be the Burlington, Rock Island, Milwaukee, Great Northern, North Western, Illinois Central, Great Western, and Soo. Later the 1500-mile Chicago Great Western (about the size of the M&StL at that time) withdrew from the pool.

As soon as the details of the new company were made public the local populace raised a howl that was heard clear to Washington. Yet the plan did have its merits, else hard-headed Jesse Jones of the R. F. C. and his ace railroad adviser, John Barringer II, would not have given their stamp of approval. No, there was nothing irregular about Associated's way of getting the $7,200,000 to purchase the bankrupt railroad, or of the capital structure in general. But the matter of dismissing some 2000 employees, of leaving 21 towns and villages without rail service and rendering grain elevators, coal pockets and building material yards virtually useless, did enter the picture. Too, dismemberment would disrupt the established channels of commerce, particularly time freights highballed over the M&StL from Minneapolis to Peoria and in conjunction with interline shipments to St. Louis, Kansas City, and Omaha. Finally, after much testimony, the I. C. C. ruled against partitioning the system. The Commission went on to say:

> Since the M&StL is in no more danger as an operating unit than many other railroads in the United States, and has as reasonable prospects for successful reorganization as many of the railroads whose properties are now in process of reorganization under Section 77 of the Bankruptcy Act, as amended, its service as an independent carrier should be continued unless its dismemberment, as proposed in the plan, would promote the public interest as a whole.

Concluding, the I. C. C. was at a loss to see how the proposed dismemberment plan would, as a whole, prove beneficial to the public.

In the meantime, one might ask, what had the Peoria Gateway Line been doing to justify the Commission's stand? The answer is: Plenty. An able rail executive with

good equipment can achieve wonders, but with poor rolling stock and plant it takes a master railroader to make even a fair showing. Such an executive is Lucian C. Sprague, president and ex-receiver of Minneapolis & St. Louis. A man, a plan, and unremitting support from the rank and file of the railroad made progress a reality. Five years of planned modernization, that was the program, —a record of achievement which in its limited field may in a sense be likened to Russia's Five-Year Plan. Of course, the former was democratic yet thorough and far reaching, affecting the road's entire personnel. It was a case of workers uniting shoulder to shoulder under inspiring leadership for a common cause: to help their railroad, to safeguard their jobs and to raise the road's standard of service. Noble sentiments, these, yet ideas backed by practicable work-a-day examples.

One of these is thriftiness; another, whether for man or railroad, is the logical corollary of paying all debts promptly and when due. Prior to the coming of Receiver Sprague on January 1, 1935, they were lofty ideals; subsequent to his taking office they became axiomatic realities. The opinion expressed by some, that the property was "of little worth as a railroad but of considerable junk value," was in a sense heeded. As a result, worn-out rolling stock has been scrapped at high salvage value. All in all, some 75 rusty locomotives and 2887 decrepit cars brought in the much-needed payroll dollars and cash to pay outstanding debts.

Then there was the problem of new equipment, always a costly item on any railroad. I recall a squib in *Railway Age* several years ago about the M&StL buying something like a thousand freight cars. To me it seemed like a poor family buying a Packard just to keep up appearances instead of renovating the second-hand Ford. Poor business? No, not at all; I was wrong.

"Every car we buy," an M&StL employee told me, "is like money in the bank provided we keep 'em moving, and preferably on foreign lines."

"But," I countered, "think of the cost."

"Cost, nothing,' the Midwesterner replied. "We borrow money to buy rolling stock, sure—but the off-line per-diem return, as you know, is a dollar every 24 hours, and the daily payment including principal and interest on each car runs from 50 to 85 cents. The difference, that's what helps pay my salary and," he added with a chuckle, "buys other rolling stock. See?"

Actually, of course, a lower on-line return brings the average earnings of these new cars to something less than the dollar quoted, but when we realize again that one modern car can replace perhaps two of the older, we see that our M&StL worker spoke close to the truth.

Apart from this miscellaneous revenue a modern freight car is vastly superior to its wooden forerunner and considerably more economical to operate, so that, with the greater carrying capacity pointed out above, it is a far more profitable vehicle. The saying "It takes money to make money" was never more apparent than on a railroad. And this in even greater measure is true of motive power.

The standard type of locomotive on the M&StL is the Mikado, which before modernization was far short of standard performance as contrasted with the Mikes of other roads. Consequently, they took the wheezy, leaky hogs and rejuvenated them with syphons, stokers, feedwater heaters, improved superheater units and other improvements stepping up the tractive effort of each from 46,000 to 62,000 pounds. Then, with the liberal use of paint and some slight external revamping, the old steamers have been given an almost streamlined appearance. When completed the locomotive rehabilitation program will show a 33 per cent increase in tractive effort, thus making in effect two engines often do work that once required three.

Since 1936 the company has purchased 12 new Diesel switchers and has two more on order. These economical units may be seen doing 24-hour service in the yards at Minneapolis, Marshalltown, Oskaloosa, Albert Lea, and other points. In addition, nearly 2000 freight cars were bought within this six-year period and the remaining equipment put in tip-top running order. At this writing the company has 102 locomotives, 12 of which are Diesel-electrics, about 4300 freight cars, 32 passenger cars (including gas-electric units) and some 195 work and miscellaneous rolling stock.

Of the 13 million dollars taken from earnings to modernize the property, a big slice

went into improvements on track and line. New rails, ties and ballast brought the main stem and important branches up to that of any well kept property. Battered and poorly alined 70-pound rail gave way to 90- and 100-pound, and track which in many sections had no ballast at all was securely anchored in gravel and cinders. Rotted and scored ties were replaced by oak on the main line and cedar on the branches, all purchased from on-line producers, thereby saving freight charges entailed by the former practice of buying from lumber dealers on foreign lines. Even the lowly switch lamps came under the scrutiny of the management and as a result they have been superseded by oilless reflectors. The saving: $18,000 a year!

We have enumerated some of the many ways in which the road has reduced expenses and operating costs to earn a profit—a negative approach, to be sure, but there is a positive method, the matter of increasing traffic, and a very important part of the rehabilitation program it is. Take the off-line traffic solicitor as an example. Seven years ago the company had only 29 solicitors; today it has 71. This is one reason for the large increase in bridge traffic. New agencies at Boston, Winston-Salem, N. C., Philadelphia, Dallas, Portland, Ore., and Omaha mean new routings over the Peoria Gateway Line from points in New England, the East, South, and areas in the Middle and Far West. Despite their distances from home, the sales staff members know their railroad as they do their tariff. Indeed, just to be sure, the management makes a practice of giving the solicitors a two-day business junket over the road every few years so they may have an intimate first-hand knowledge of the property.

A comparatively recent newcomer to the traffic department is the industrial agent. Schooled in the art of finding suitable manufacturing sites and such desiderata as low taxes, raw materials and efficient labor, this gentleman is a specialist in his field. The hundreds of new industries, including oil storage units, coal and lumber yards, beer distributing companies and manufacturing plants, located within the Peoria Gateway corridor are the result of this agent and his staff. But the industrial department's crowning achievement is the huge Flamingo Mine near Fairview, Ill. Its all-steel, all-electric preparation plant is one of the most modern of its type. Best of all, as a result of the department's foresight in quickly installing extensive siding facilities and "beating the other roads to the draw," Flamingo washed coal is shipped from the collieries over Minneapolis & St. Louis rails.

While all this hoping, planning and improving was going on, the railroad was being periodically put up for public sale. Let's go back to last May 15 and visit the Cedar Lake yards of the railroad.

At exactly 10 o'clock, a very dignified looking gentleman entered the office of the division superintendent. This gentleman was C. W. Wright, general counsel for the re-

Minneapolis & St. Louis.

Albert Lea station.

In the distance (southward) the M&StL branches, one line to Des Moines and another to Oskaloosa and Peoria. The Illinois Central branches off to the east a few miles south.

ceiver. Another man also entered the same office in a wheel chair. It turned out to be Special Master in Chancery Howard S. Abbott, the master of the preceding period. There were only four visitors and a small handful of employees present.

The master in chancery was wheeled up to the desk and the general counsel sat facing him beside the desk opposite. The latter didn't say a word during the whole proceedings, while Abbott simply mentioned the subject in his naturally legal vocabulary, then read the decree of April 7, 1942, which was pretty lengthy. There were 42 pages to read, so everyone sat and smoked for about half an hour while this legal red-tape was being properly carried out. This was the forty second time that Judge Abbott had appeared to carry out a possible sale of the M&StL. For 19 years no bidder was found.

But such was not the case on July 24, when the minimum price of $2,010,000, as fixed by the court, was bid at the auction by Cloverdale & Colpits, reorganization managers. At this forty-third sale the 19-year-old receivership was ended.

Under the arrangements of the new owners, the railroad is to be operated as two closely related but separately operated corporations, the lucrative heavier traffic lines from Minneapolis to Peoria, including the bulk of the system except the lines west and south of Winthrop to Loyola, S. D., and Tara, Ia., being unit A, known as the Minneapolis & St. Louis Railway Company, while the marginal light traffic routes to the west will be Unit B or the Minneapolis & St. Louis Railroad Corporation. Further, the sole capitalization of the weaker road will be 10,000 shares of no-par stock, all of which will be purchased by the prosperous A unit. This will enable the light traffic portions of the M&StL to operated with no funded or short term debt, making for economical management at the outset. The companies will continue under the guidance of L. C. Sprague, who has been elected their president.

Minneapolis & St. Louis

Smoke and steam and steel.

Doubleheaded by a Pacific and a Mikado, an M&StL fast freight gets going after a stop at an interlocking. The same train, farther down the track, is shown at the top of page 3.

TODAY President Sprague sits in his office on the seventh floor of Minneapolis' modern Northwestern Bank Building, located within the heart of the city, and reflects for a moment on the things "we have done," then turns to the problems confronting the road.

Lucian C. Sprague, railroader from way back, seldom speaks of any improvement without mentioning the "men out on the line," the "we" so essential to running a railway. And he speaks advisedly! Starting as a call boy in 1898 for the Burlington, Sprague became machinist's apprentice, fireman, engineer, traveling engineer, then ably fulfilled the executive positions of trainmaster, superintendent, general superintendent, vice-president, and assistant to the president on other roads, and finally came to the M&StL as receiver and president. Yes, he knows railroading! But the trainmen like to tell of how he personally worked out the designs of tender-boosters for that grade on the main at Steamboat Rock. Now even lengthy freights no longer require a pusher on the hill. The engineman merely cuts in the booster and there is ample power to make the grade.

Although a mathematician of sorts (he'll do a math problem just for fun, and the tougher they come the better he likes 'em) Sprague as a person is far from austere and coldly exact. Like most well integrated

people, he has hobbies: "My family, my business and my horses." He likes to think of the company as "a big railroad family," not in a paternalistic way but as a group of loyal employees working together for the road, the public, and the betterment of humanity. And he adds, whimsically, "I like horses, too, both the iron and four-footed species." Indeed, "his" 600-type iron horses are among the most efficient of their kind on rails, and his flesh-and-blood horses are just about the fastest on the turf, for he has owned four world champion trotters and pacers.

President Sprague has keenly felt his responsibility—the road's responsibility—to the citizens of Minneapolis, many of whom are directly or indirectly interested in the carrier. When the road was in danger of being dismembered the *Minneapolis Journal* carried the story on its front page with headlines clear across the sheet. Yes, the old M&StL is still top-drawer stuff in Minnesota's biggest city.

This is not surprising, for the road was started by the initiative and foresightedness of the city's businessmen. Back in the late sixties a group of the merchants, bankers and leading citizens acquired the Minnesota Western Railroad Company's charter, a road incorporated on March 3, 1853, when Minnesota was still a territory. They changed its name on May 26, 1870, to the Minneapolis & St. Louis Railway Company and forthwith proceeded to build the road from White Bear through Minneapolis to Merriam Junction. This was the main line of the company in the seventies and it's the main stem today (except for that short segment from the city to White Bear, which was later sold to the Northern Pacific). Bit by bit the fledgling carrier expanded, building a line here, buying one there or "playing ball" with other railways to obtain trackage rights or joint ownership. Building, buying, leasing —all three went on apace well beyond the turn of the century, when the Peoria Gateway Line became substantially what it is today.

To trace the history and corporate relationships of the Minneapolis & St. Louis would tax the mind of a Philadelphia lawyer, for it's a long story of mergers, reorganizations and expansion. Indeed, the M&StL proper or its major predecessors were at one time or another controlled by the Rock Island and other roads. But there were three important properties which may be said to constitute the present Peoria Gateway system, so we'll say a few words about them: the Minneapolis & St. Louis, comprising about 860 miles of road; the Iowa Central, with 557 miles of track; the Des Moines & Fort Dodge, tagging along with some 144 miles of line.

The Minneapolis and St. Louis Railroad Company!

We've said this company extended south from Minneapolis to Merriam Junction, a line which was promptly pushed on to Albert Lea and thence by joint operation with the Rock Island across the state line to Northwood, Ia. Meanwhile, coal was discovered in the vicinity of Fort Dodge, and cheap fuel was just what the people in Minnesota needed. Too, the farmers in Iowa wanted Minneapolis flour and Minnesota lumber; in other words, both states desired free interchange of goods, which is to say they needed a connecting railroad. True, the Iowans had their local line, the Fort Dodge & Fort Ridgeley Railroad & Telegraph Company (incorporated July 22, 1876), but local it was, extending only a scant 18 miles from the former town to Humboldt. Not having the means to build a lengthy railway, they looked to Minneapolis, which in turn looked to its own M&StL. The outcome? A railroad known as the Minnesota & Iowa Southern, built chiefly with M&StL capital and run from near Livermore, Ia., to the Minnesota-Iowa state line. Finally the gaps at both ends were bridged and the Minneapolis-Albert Lea-Humboldt-Fort Dodge through route was completed. By 1881 the whole business came under direct control of the M&StL.

Not to be outdone by this expansion in the south, the northern and western parts of the system came in for their share of track-laying and railroad-buying. By 1884 the far-flung Hopkins-Winthrop-Watertown line was completed and trains were running through to South Dakota. Six years later found the Winthrop-Storm Lake section opened, thus making an alternate route to Fort Dodge via Spencer and a connecting line. It was not, however, until December 18, 1905, that the Minnesota, Dakota & Pacific Railway was incorporated to construct the Y-shaped line west of Watertown to Conde, with one leg running to Leola and the other

Trains' Albums.

Quite unintentionally, our announcement of TRAINS' Albums on the inside back cover may be open to misinterpretation. We mention the size as 44 pages, which is the printers' description, figuring both sides of each sheet. But the photos are printed on one side only, so the books are better described as "22 large sheets of photos."

extending some 112 miles to the hamlet of Le Beau. No, the " . . . & Pacific Railway" never did see the West Coast, but it did reach the Missouri and a river town of 210 people. Even that was a Phyrric victory, for the Le Beau-Akaska sector has long since been abandoned and the remainder of the line to Conde was scrapped a few years ago. Incidentally, the Minnesota, Dakota & Pacific was formally purchased by the M&StL in 1912. Enter now the second important system:

The Iowa Central Railway Company.

Most of the Hawkeye State's railroads are part of "transcontinentals" or other large trunk lines with offices in Omaha or Chicago. But the Iowa Central was Iowa's own! Never a great money-maker, it nonetheless is deeply entrenched in the heart of Iowans, especially those directly served by its lines.

"We're on the old Iowa Central." That's a familiar expression which may be heard to this day. The older folk in particular remember how the road built up their farms: hauled grain, hogs, cows to market; brought back merchandise and trinkets from town. They recall how a cattleman in Ollie (on the the former route between Martinsburg and Brighton, now discontinued) used to charter a two- or three-car train to bring customers from Oskaloosa and nearby points to his blue-blooded cattle auction held in the village. Too, they'll reminisce on the good times of other years: those Sunday excursions to Oskaloosa, later to Keithsburg-on-the-Mississippi and thence by boat down "Ol' Man River" to Fort Madison, where one and all toured the penitentiary. Yes, the Sabbath outings by train were high spots in the social life of many an Iowa town. "With only a sandwich and a song we made a day of it. Now today . . . "

As Midwestern roads go, the Iowa Central is in truth an old road. It goes clear back to the Eldora Railroad & Coal Company, incorporated February 7, 1866, to build a line from Eldora to Ackley (both on the main line of the present M&StL). In accordance with early railroad procedure it was quickly sold, two years later, to the Iowa River Railway Company. Hardly had the new carrier extended its iron to Marshalltown when it in turn was bought by the Central Railroad Company of Iowa (September 30, 1869). Meanwhile, another outfit known as the Iowa Central Railroad Company purchased the right of way and did considerable construction work from Oskaloosa to Albia and beyond, and was subsequently taken over by the Central Railroad Company of Iowa.

Then Central Railroad Company of Iowa, after a merry round of receiverships, sales and resales, reorganizations, etc., became successively the Central Iowa Railway Company, Iowa Railway Company, and finally, on May 14, 1888, the Iowa Central Railway Company. By the aforementioned process of building, buying and leasing, the Iowa Central eventually had a through line from Alvia via Oskaloosa to Peoria, and from Oskaloosa to Northwood, where it joined with the M&StL, and a half-dozen branches. In short, it was a valuable property with a fine bridge across the Mississippi. Such a strategically located road as the Iowa Central, while not of great worth as a separate entity, would make an admirable link for other trunk lines not serving Peoria nor Oskaloosa. As a result it was wooed by various roads, but the Minneapolis & St. Louis was the one which finally got control (about 1900), and on January 1, 1912, it was sold to that company. Here we have nearly all the Peoria Gateway Line as it is today except for the lines into Des Moines, which brings us to:

The Des Moines & Fort Dodge Railroad.

Chartered as the Keokuk, Fort Des Moines & Minnesota Railroad Company, June 27, 1854, it actually connected the two towns in its name before being re-titled the Des Moines Valley Railroad Company. In 1869 and 1870 the road was extended from Des Moines to Fort Dodge. This section of the

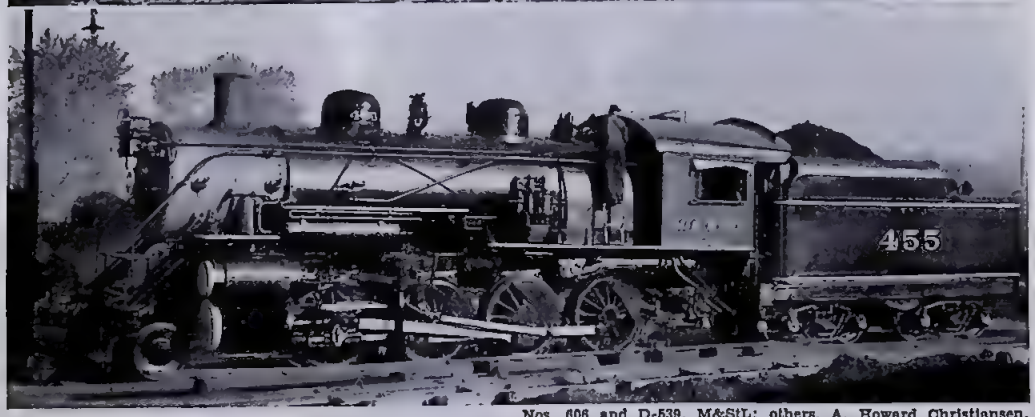
line became the Des Moines & Fort Dodge Railroad on February 21, 1874. It appears that the whole road from Keokuk to Fort Dodge was subsequently controlled by the Rock island, but the Des Moines & Fort Dodge Railroad proper came under the jurisdiction of the M&StL in 1905 and was formally conveyed to that company on August 9, 1915. Prior to this date the road was extended to Ruthven, where it connected with Spencer by trackage on the Milwaukee Road.

And so from these prefabricated parts, molded and hammered into their most efficient shapes during the years before their purchase, was welded together the M&StL, the road that was to evolve into a fast, dependable freight carrier serving the breadbasket of America as it had never been served before. Perhaps the carrier will never be regarded as a gilt-edged investment; still, a modest income plus efficient operation, competent management and localized control, amenable to the communities served, is a pretty good solution to this or any other "railroad problem" in the nation's breadbasket.

Old engines for new.

These are some of the locomotives scrapped or sold by Sprague to raise funds for new equipment. Top is a 28,015-pound tractive effort Ten-Wheeler, snapped at Baldwin, where it was built in the early years of the century. Next is Mogul 302, also Baldwin-built and photographed at the factory. The two old American Standard engines were built by Rhode Island, 1892, and Manchester, 1881. The two engines at bottom of column obviously survived as useful motive power until well into the days of the present management. The Consolidation, 447, was a low-drivered (55") job built by Schenectady in 1902, and the neat Pacific (only one, the 502, is still on the roster) was built by Brooks in 1921.

No. 151, W. K. Aughenbaugh, 4014 St. Johns Ave., Cincinnati; others, A. Howard Christiansen.



Nos. 606 and D-539, M&StL; others, A. Howard Christiansen.

M&StL locomotives.

After the big cleanup of cars and motive power the railroad's roster of locomotives looks quite different. The M1-50 Mikados were sleeklined, and were given new efficiency features so they now look like No. 606, above. Compare this with its brother, No. 631, shown on page 37. The universally useful Consolidations were retained as much as was practical, shined up and tuned for better service, as were the switchers and the Moguls. Other old types such as the 4-4-0 were discarded entirely and today, because of the practical elimination of steam-hauled passenger trains, the railroad owns only two Pacifics. The newest locomotives now in operation are two General Electric Diesel switchers delivered this year, the lightest engines on the road. The oldest engines still in service are Nos. 310, 311, and 312, built in 1899 at Schenectady. Engines 63 and 66 are not in use but their future has not as yet been determined. Since passenger service is at best rather light, it is handled in 11 gasoline-electric rail cars, seven of which have no passenger compartments but pull trailer coaches.

Locomotives of the Minneapolis & St. Louis.

Class	Nos.	Type	Driver Diam.	Steam Pressure, Pounds	Cylinders, D. and S.	Tractive Effort, Pounds	Weight, Pounds (with Tender)	Builder	Total Number of Locos.	Year Built
F3-30	63	2-6-0	51″	175	20″ x 26″	30,280	243,650	Baldwin	1	1908
F4-33	66	2-6-0	51″	190	20″ x 26″	32,930	277,000	Baldwin	1	1911
F5-32	67	2-6-0	51″	175	20½″ x 26″	31,870	257,000	Baldwin	1	1909
B3-35	80-89	0-6-0	57″	190	21″ x 28″	35,000	277,600	American	10	1916
G6-24	226-27	4-6-0	67″	185	20″ x 26″	24,410	287,000	Baldwin	2	1909
G6-24	228	4-6-0	67″	200	20″ x 26″	26,390	287,000	Baldwin	1	1909
G6-24	229	4-6-0	67″	185	20″ x 26″	24,410	287,000	Baldwin	1	1909
F1-27	304	2-6-0	63″	190	20″ x 26″	26,660	240,200	American	1	1902
F1-28	310-312	2-6-0	63″	200	20″ x 26″	28,100	241,850	Schenectady	3	1899
F2-33	329-31, 333	2-6-0	57″	200	20″ x 23″	33,400	260,000	Baldwin	4	1908
H2-38	400-01, 404-06, 408, 410, 412, 419	2-8-0	59″	200	21″ x 30″	38,100	292,000	Baldwin	9	1909
H5-39	450	2-8-0	59″	185	22″ x 30″	38,670	334,000	American	1	1912
H5-42	451	2-8-0	59″	200	22″ x 30″	55,800*	392,900	American	1	1912
H5-39	452-61	2-8-0	59″	185	22″ x 30″	38,670	334,000	American	10	1912
H6-38	462, 468-71, 473-74, 477-79, 481	2-8-0	59″	200	21″ x 30″	38,100	323,000	Baldwin	11	1910-11
K1-32	502	4-6-2	69″	190	22″ x 28″	31,800	392,000	American	1	1921
M1-50	600, 602-05	2-8-2	59″	200	24″ x 30″	49,800	448,700	American	5	1915
M1-50	606	2-8-2	59″	200	24″ x 30″	61,300*	479,400	American	1	1915
M1-50	607-10	2-8-2	59″	200	24″ x 30″	49,800	448,700	American	4	1915
M1-50	611	2-8-2	59″	200	24″ x 30″	61,300*	475,900	American	1	1915
M1-50	612-14	2-8-2	59″	200	24″ x 30″	49,800	446,400	American	3	1915
M1-50	615-18	2-8-2	59″	200	24″ x 30″	49,800	448,700	American	4	1916
M1-50	619	2-8-2	59″	200	24″ x 30″	61,300*	479,400	American	1	1916
M1-50	620-24	2-8-2	59″	200	24″ x 30″	61,300*	479,400	American	5	1921
M1-50	625	2-8-2	59″	200	24″ x 30″	49,800	455,900	American	1	1921
M1-50	626-34	2-8-2	59″	200	24″ x 30″	61,300*	479,400	American	9	1921

* Including Booster.

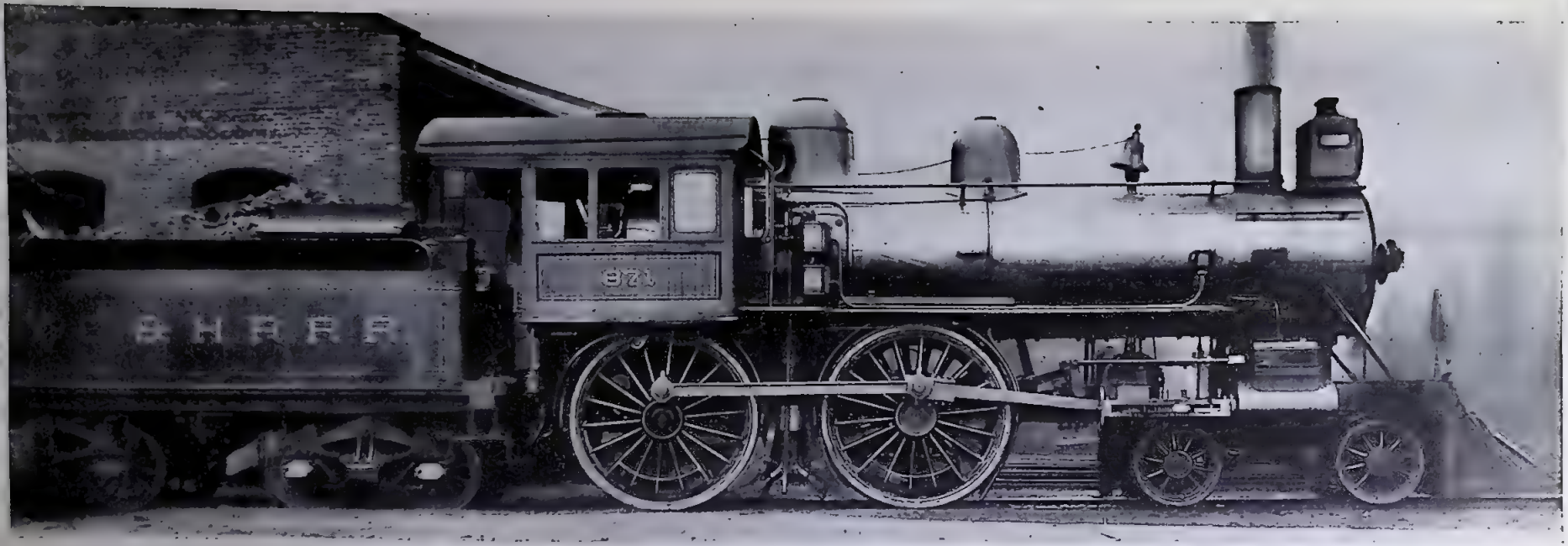
DIESEL-ELECTRIC SWITCHERS

Class	Nos.	Type	Driver Diam.	Cylinders	Horse Power	Weight, Pounds	Builder	Total Number of Locos.	Year Built
	D-438	0-4-4-0	40″	8-8″ x 10″	600	206,600	Elect.-Motive	1	1938
	D-538	0-4-4-0	40″	12-8″ x 10″	900	253,300	Elect.-Motive	1	1938
	D-738	0-4-4-0	40″	12-8″ x 10″	900	253,300	Elect.-Motive	1	1938
	D-838	0-4-4-0	40″	8-8″ x 10″	600	206,600	Elect.-Motive	1	1938
	D-139	0-4-4-0	40″	12-8½″ x 10″	1000	249,600	Elect.-Motive	1	1939
	D-539	0-4-4-0	40″	6-12½″ x 13″	1000	230,000	American	1	1939
	D-939	0-4-4-0	40″	6-12½″ x 13″	660	196,800	American	1	1939
	D-340	0-4-4-0	40″	8-12¾″ x 15½″	1000	237,300	Baldwin	1	1940
	D-740	0-4-4-0	40″	12-8½″ x 10″	1000	248,500	Elect.-Motive	1	1940
	D-741	0-4-4-0	41″	6-12½″ x 13″	1000	230,000	American	1	1941
	D-742	0-4-4-0	33″	16-5¾″ x 8″	380	88,000	General Electric	1	1942
	D-842	0-4-4-0	33″	16-5¾″ x 8″	380	88,000	General Electric	1	1942

GAS-ELECTRICS

Class	Nos.	Type	Wheels	Cylinders	Horse Power	Weight, Pounds	Power Plant, Builder	Total Number of Locos.	Year Built
	GE-1	Pass., Bagg., & Mail	33″	6-8″ x 10″	300	127,800	Elect.-Motive	1	1929
	GE-2	Pass., Bagg., & Mail	33″	6-8″ x 10″	300	127,800	Elect.-Motive	1	1929
	GE-3	Pass., Bagg., & Mail	33″	6-8″ x 10″	300	127,800	Elect.-Motive	1	1930
	GE-4	Pass., Bagg., & Mail	33″	6-8″ x 10″	300	130,000	Elect.-Motive	1	1931
	GE-25	Bagg. & Mail	36″	8-8″ x 10″	400	146,250	Elect.-Motive	1	1930
	GE-26	Bagg. & Mail	36″	8-8″ x 10″	400	146,250	Elect.-Motive	1	1930
	GE-27	Bagg. & Mail	36″	8-8″ x 10″	400	146,250	Elect.-Motive	1	1930
	GE-28	Bagg. & Mail	36″	8-8″ x 10″	400	146,250	Elect.-Motive	1	1930
	GE-29	Bagg. & Mail	36″	8-8″ x 10″	400	146,000	Elect.-Motive	1	1931
	GE-30	Bagg. & Mail	36″	8-8″ x 10″	400	145,000	Elect.-Motive	1	1931
	GE-31	Bagg. & Mail	36″	8-8″ x 10″	400	145,000	Elect.-Motive	1	1931

Total number of locomotives on active service roster ----------115



Famous Engines

Photograph and data furnished by Arthur Curran, 16 Ballard St., Newton Center, Mass.

ONE of the most influential designs of fast passenger locomotives was that developed by William Buchanan more than 50 years ago. Some very creditable attempts at improvements in design had been made on other roads during the preceding decade, the main defect of all being inadequate boiler pressure. These pressures ranged from 130 to 160 pounds.

Buchanan decided to use 180 pounds. His first order, for 12 engines, Nos. 860-871 inclusive, came from the Schenectady Locomotive Works early in 1890. These engines had 19" x 24" cylinders, 70" drivers, and a weight of 120,000 pounds. The tanks had a capacity of 3500 gallons and were equipped with water scoop.

At about this time the New York Central & Hudson River, of which Buchanan was superintendent of motive power, decided to put on a world-beater train between New York and Buffalo, the *Empire State Express*. Buchanan then removed the 70" drivers from Nos. 870 and 871 and substituted 78" drivers.

For some reason, Buchanan became very fond of the fast 870, which his brother Archibald ran, and to make it the head of its class, he renumbered the engines from 860-869 to new numbers 913-922.

Later, in 1890, 21 more were received from Schenectady; these being Nos. 872-892 inclusive. Of this order, only the 872 and 888 had large wheels, all others having 70" drivers. In due course, others followed until, by 1899, the 946 was up to 126,000 and finally to 134,000 or 136,000 pounds. Engines built at West Albany were Nos. 923, 945 and 999.

Throughout this period, the main characteristics of the original design, known as Class I, were retained, increases in weight being accompanied by increases in heating surface and grate area. Later examples of the design were given 4500-gallon tanks and eventually 5000-gallon tanks.

All but four of these engines were built at Schenectady. One of the original order, No. 871, is shown here, with 78" drivers.

Various writers have referred to the merits of these engines, but few have stressed the importance of the boiler pressure. Previous designs by Buchanan had from 145 to 155 pounds of steam, being comparable with those of other roads. The year 1890 marks the beginning of a trend which had far-reaching effects.

In this connection, it is of interest to note that even the engines with 70" drivers were capable of 75 miles per hour, which was creditably above their diametral speed. This was due to the fact that they were good steamers. And although Buchanan liked the "highwheelers," he ordered a great many with the smaller drivers.

In the months since Pearl Harbor the railroads of the United States have carried three times as many soldiers as in the same months of the last war.

Of the 6,800 Pullman sleeping cars and 17,500 passenger coaches on the railroads today, a great part are assigned to military movements — and the armed forces have first call on all the rest.

Besides troop movements, there are those who must travel on essential war business. There are service men on furlough There is the shortage of tires and the rationing of gasoline — all adding to the demand for space on the trains.

That demand must be met with the cars we have—other war needs make it impossible to get any more.

So please help the other fellow who *must* travel — and help yourself — and help us to get the best use out of what we have.

DON'T WASTE TRANSPORTATION. *Plan early.* Make reservations and buy tickets as far in advance as possible. *Avoid week ends.* Do your traveling in the middle of the week whenever possible. *Travel light.* Limit your hand baggage to actual requirements. Other baggage can be checked. *Plans changed?* Cancel your reservation promptly if your trip is deferred or called off. It will help the other fellow.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

ASSOCIATION OF

AMERICAN RAILROADS

WASHINGTON, D. C.

Letters

★ **Interesting sidelights on railroads as readers observe them.**

Early Streamliner.

In the hope's that you may have some use for it in Trains, I am enclosing a copy of an old daguerreotype, showing the model which Samuel R. Calthrop of Roxbury, Mass. (later of Syracuse), constructed to accompany his patent application for the design of a streamlined train in 1865. This was almost 30 years prior to F. U. Adams' better known streamliner built by the B&O. Surely Calthrop deserves recognition. His daughter and I have been working several years toward this end, with little success.

Calthrop was a scientist, inventor, orator, and classic scholar. An athlete as well, he was probably the first coach of the Harvard University crew.

He was likewise a great walker, frequently keeping to railroad tracks. Often on these occasions he noticed that the tracks were worn unevenly and in spots were brighter, as from friction. At these points he also noticed that there was a strong wind which would force a train to one side. (This theory is corroborated by Calthrop's daughter, who often accompanied him on these walks.) Gradually the idea of an "air-resisting train" returned him to his beloved racing shells as the ideal form. From this not only evolved a streamlined train, but an air-conditioning system (quote from his patent: " . . . the air may enter as far forward as the projection of the engine and be conveyed beneath the covering of the tender by tubes and hence into the cars"), full-width diaphragms and enclosed entrance steps—these in 1865!

Unsuccessful in marketing his patent, Calthrop sold one-half interest a year later, to a Mr. Copeland, for the sum of $1! From there on the idea was forgotten until F. U. Adams' B&O train of the nineties and then again until 1933.

Copies of Calthrop's patent (No. 49,227) with complete technical description are available at the Patent Office. [Send 10 cents.]

Surely the pioneer deserves recognition, and what would be more fitting than a streamliner named for him?

L. O. Merrill Jr.

124 Redfield Pl., Syracuse, N. Y.

More Cars for Pacific Electric.

The state railroad commission has arranged for 125 of the former Espee Interurban Electric cars of Oakland lines to be brought south and used on the Pacific Electric. A friend in Glendale recently told me that he saw six of them on a freight heading for Los Angeles, so again we find that more "boomer" cars are assigned for the "unique" PE. If every car on the road were still lettered for its original road, it really would make an interesting sight. In such a case, a good 25 per cent would be so lettered, I'm certain.

Jack Whitmeyer.

3450 Russell St., Riverside, Calif.

Note on the Silverton Northern

While in Silverton, Colo., July 14, I noticed a sign posted on a building, property of the Silverton Northern Railroad, stating that the property of the railroad was to be sold for unpaid taxes, amounting to $14,000. As the mines that supported the railroad are now closed, it was probably sold for scrap.

G. M. Boyd.

2457 Armitage Ave., Chicago, Ill.

[The Silverton Northern applied in June for permission to abandon its track.—*Ed.*]

One Goes North; the Other, South.

As an old Cripple Creeker, permit me to congratulate you on your story of the "Forgotten Railroad" in the July number of Trains. It's splendid.

Let me tell you a story: One day, as a

cub reporter in Cripple Creek, I was hard up for news. I was returning to Cripple Creek from Victor, on the Florence & Cripple Creek's narrow-gauge steam interurban. From Elkton the narrow-gauge ran westerly. On the opposite side of the gulch were the tracks of the Short Line electric and the Midland Terminal. At the particular moment our train was headed westerly (going to Cripple Creek); on the opposite side of the gulch was a Midland Terminal train headed as we were but going to Victor. Both trains were headed westerly but one was going north and the other south.

I wrote a story about it. The next day I was on the narrow-gauge and I heard two miners talking about it, discussing how two trains could be traveling westerly yet one going north and the other south. After listening to their many uncomplimentary remarks about the writer of the story, I leaned over and explained it to them, but before I could get it through their heads I had to draw a diagram. Look at the map on page 20 [July].

W. M. Arkins.

108 W. 6th St.,
Los Angeles, Calif.

C'est la Guerre.

I JUST noticed a weird war train pulling out of the Illinois Central yards. It was headed by a heavy IC hog with an auxiliary tender, followed by a Milwaukee Road baggage car, five Pullmans (green), another Milwaukee baggage car, doors open with soldiers guarding . . .

Five more Pullmans filled with soldiers, a third Milwaukee baggage car . . . four Pullmans, then 22 flat cars loaded with jeeps, peeps, and army trucks. These were followed by an NYC combine and an IC caboose.

Sid Wells.

739 Greenleaf Ave.,
Glencoe, Ill.

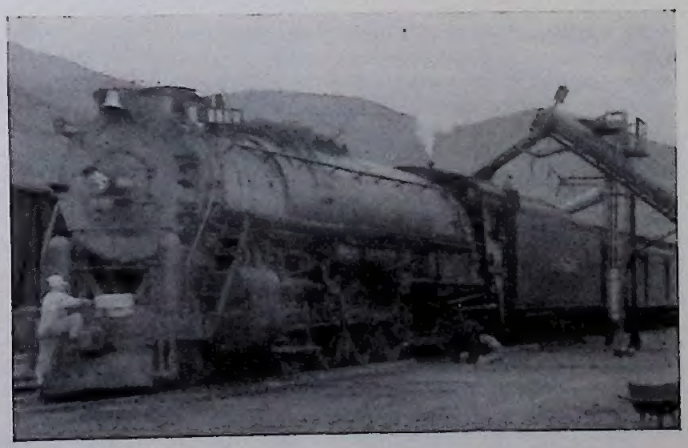
Railfans' Paradise.

MUCH of my spare time is spent at the Alexandria (Va.) station or at Seminary, a junction of the Richmond, Fredricksburg & Potomac and the Southern and C&O, a couple of miles south. It is a railfans' paradise for all types of trains, streamliners of the Southern, heavy Mountain type of RF&P, super-Pacifics of the C&O and the RF&P, and tons of freight pulled by Consolidations, Decapods, Mountains and even Pacifics. I once saw Erie, Rock Island and RF&P coaches, an ACL diner and several Pullmans pulled by a brightly colored Diesel of the Atlantic Coast Line. No better place could there be for a railfan than this main line to the South, where ACL, Seaboard, RF&P, Southern and C&O power and equipment go rolling every hour in endless parade.

Sgt. Homer R. Hill.

Hq. Co. 1st E. S. R., Fort Belvoir, Va.

L. C. L. Freight Rides the Pilot.



I HAVE just returned from a week's vacation in Colorado. I traveled over most of the narrow-gauge lines still serving passengers in that state. There's enough there to fill any railfan's heart's desire.

Salida holds great opportunities for the rail photographer; operating from here are a number of the D&RGW narrow-gauge locomotives—mostly Consolidations and outside-frame Mikados—as well as a variety of standard-gauge engines. Among other pictures I took was this shot of a trainman placing some l. c. l. freight on the pilot of a passenger train for the trip over the Divide, west from Salida on the Rio Grande.

R. A. Robinson.

11161 Longwood Ave., Chicago, Ill.

The Month

★ 1942 railroad earnings estimated at 800 millions.

★ Indicative of a return to financial health for the American railroads after Victory is the nationwide trend toward lower dividends and larger payments on funded debt and loan retirements. This combination, along with increased cash in banks and increased depreciation reserves, portends an economically sound railroad system in the future, one that will capably compete with truck and plane transportation. *Time*, October 19 issue, estimates that earnings for 1942 should be above 800 million dollars—60 per cent above 1941 earnings of 501 million dollars. Dividends last year totaled about 200 million dollars, this year will not exceed 300 million dollars—40 per cent of estimated profits; the balance, *Time* indicates, will be used: 200 million dollars as depreciation reserve, some for funded debt retirement, some for new equipment as allowed by priorities, and the rest for increased cash in banks.

★ As a result of the O. D. T. order prohibiting the introduction of new trains or the running of extra sections except where such sections were regularly scheduled one year prior to the order, the *Twentieth Century* and *Broadway* limiteds are changing to 17-hour schedules, one hour slower. Other through trains the country over will be similarly slowed. This permits of increased passenger loads by using more cars per train. In some cases the suggestion to slow down fast passenger trains has met with considerable resistance on the part of railroad officials. It is their contention that such procedure interferes with freight movements when distances of hundreds of miles are involved. Many more freight train meets would be necessary if passenger trains were on the road more hours, thus holding up important war freight traffic. The benefits of increased passenger train loads are not as important, say these officials, as getting war freight to its destination in the shortest possible time.

★ The Boston & Maine Railroad has been awarded the 1942 Socrates' High Award of the Year for excellence in its newspaper advertising. In connection with the award, the Committee of Advertising Executives states that "special recognition should be given at this time to those who made the excellence of the Boston & Maine Railroad advertising possible: to Herbert L. Baldwin, publicity director and executive secretary of the advertising committee of the road, and to Harold Cabot & Company of Boston, its advertising agency." The B&M was the first railroad in the United States to adopt a candid approach in its advertising. Using plain New England language, frankly admitting shortcomings, the road has set a new style of railroad advertising and other roads are, as a result, departing from the staid and getting into the modern vein which people understand.

★ *Wheel Clicks*, publication of the Railroad Boosters Club, Room 518, Pacific Electric Building, Los Angeles, has announced that the magazine is available to the public. Subscription price for the six issues per year is 75 cents.

★ Journal box covers made of plastics will soon make their appearance on both freight and passenger trains throughout the country. Elimination of one of the principal causes of the "hot box," that of incomplete sealing of the opening against rain, dirt, dust and snow, and the leakage of oil, is claimed for the new equipment. An estimated 30 to 50 pounds of steel per car can be saved by the use of the plastic covers.

★ Standardization of freight car parts has progressed through the years because of cooperation between the railroads, manufacturers and the Association of American Railroads. The extent of such procedure is shown by a recent report that there is now one standard freight car axle, which comes in five sizes, compared with 56 different kinds and sizes in use only a few years ago.

★ Below: A freight train that for 425 miles was forbidden to pass any train on an adjoining track, recently hauled the bulkiest single freight shipment ever handled out of Boston. It moved over the lines of the Boston & Maine, the New York Central, the Rutland, and a terminal railroad, halting all traffic on the four roads as it passed. The shipment, a huge gear built for an important part in the war, weighed 89,000 pounds; its width was two feet wider than the standard maximum width allowed by the railroads. A spokesman for the railroads pointed out that when the tremendous number of extra train movements the railroads are handling is taken into consideration, the fact that the special train of four cars which carried the big gear, its casings and auxiliaries, was kept moving is "another example of how the American railroads are meeting all the demands upon them by the war effort. No other form of transportation, under present conditions, could have handled this shipment."

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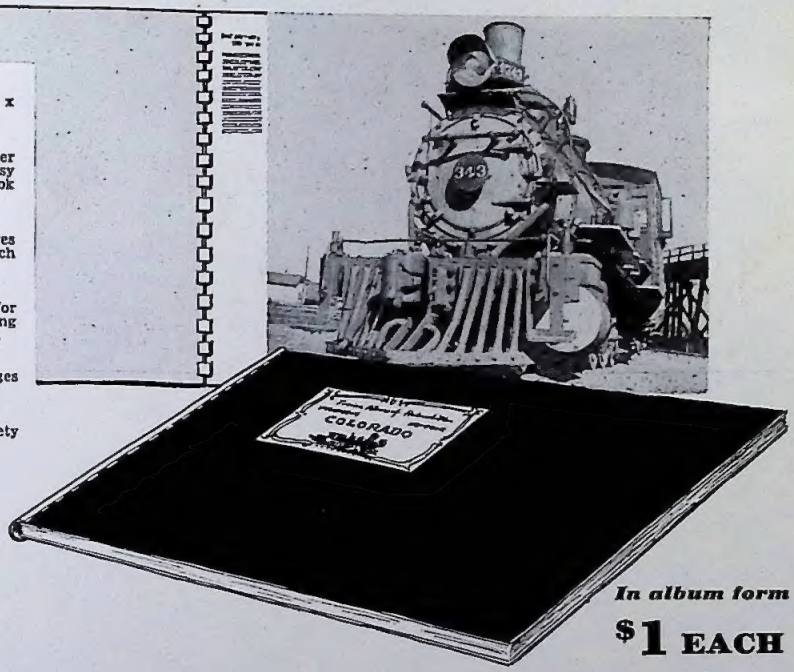

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THE finest pictures which have appeared in the last 24 issues of TRAINS magazine, together with some fine new selections, are being offered in a quality album form. The reproductions are so well printed that they are not unlike actual photographic enlargements of the original negatives. The pictures are printed on only one side of the paper, with brief explanations about the various scenes. There are locomotives, trains at speed, scenic shots, aerial views . . . pictures from coast to coast on large railroads, short lines and narrow-gauge. Volume I, the Eastern Album, has selections from the Middle Atlantic states, New York, Pennsylvania, New Jersey and Maryland. Volume II, the Pacific album, covers our Western coast from San Diego to Seattle. Volume III features the high-speed regions of the Midwest, and Volume IV, the romantic Colorado railroads.

Trains' Pennsylvania Railroad Map.

The map of the railroads of the Keystone State, recently published in TRAINS magazine, is the most detailed railroad map of Pennsylvania that has ever been offered for sale. It will be available about the 1st of December in an enlarged (17" x 22") three-color edition, which makes the map much more readable, and it is even attractive enough to use as a wall decoration. Included with the map is an index of all of the existing railroads in Pennsylvania and the most recent names of all the abandoned lines. Interurban lines and narrow-gauge railroads can be distinguished from the standard-gauge lines very easily. Price per copy _____ 50 cents.

Trains Bound Volumes.

Volume II, Nov. '41-Oct. '42, bound in rich maroon cloth, complete with index, makes a very handy book of interesting railroad material. There are less than 50 bound volumes left from the first year of TRAINS and while they last, they are also offered for the same price . . . $4.00 for either volume, please state which. Readers who wish to keep their single copies of TRAINS together in a loose leaf bound form will find TRAINS' loose leaf binder very handy. Heavy Tucson Red buckram binder to hold 12 issues of TRAINS—$2.00. Magazines are easy to insert and remove. Pictures and pages are preserved intact in this clever cover.

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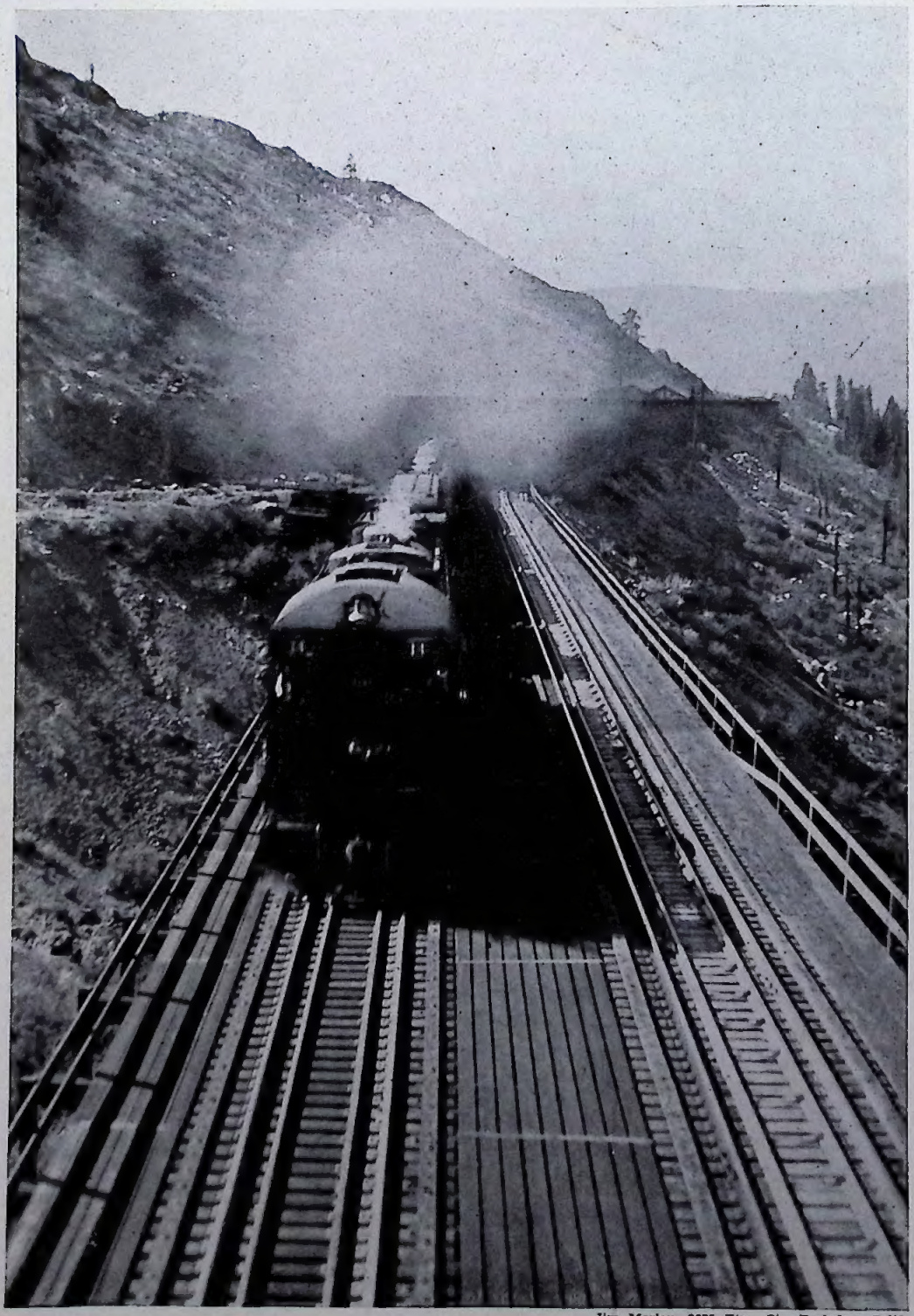

Jim Morley, 2635 Etna St., Berkeley, Calif.